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THE UNIVERSITY OF ALBERTA

A STUDY OF TEACHERS' ORAL QUESTIONS IN
SELECTED READING LESSONS

BY



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The undersigned certify that they have read and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "A Study of Teachers' Oral Questions in Selected Reading Lessons," submitted by Alba I. Mihajlovich in partial fulfilment of the requirements for the degree of Master of Education.

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ABSTRACT

This study investigated the flexibility of teachers' oral questioning behavior in relation to reading comprehension.

Five grade five reading teachers and a superior and low average reading achievement group from each of their classes were observed and their verbal interaction tape recorded during discussion of two different types of reading material, exposition and narration. The taped interaction was then transcribed. From the protocol 500 teachers' oral questions were randomly selected in four subsamples. The subsamples included 125 teachers' oral questions from each of the following contexts: narrative reading material discussed with superior reading achievement groups, expository reading material discussed with superior reading achievement groups, narrative reading material discussed with low average reading achievement groups, and expository reading material discussed with low average reading achievement groups.

Questions from the sample were grouped into categories adapted from Aschner (1961). They included memory questions, reasoning questions, judgment questions, creative thinking questions, procedural questions, and affective questions. For purposes of this study procedural and affective questions were not considered as other question types in the analysis of data. The remaining categories were grouped as follows: memory questions became questions requiring direct recall

responses (DR); reasoning, judgment, and creative thinking questions were grouped into questions requiring some analysis and evaluation in addition to direct recall (DR+).

In analysis of the total sample remaining after abstraction of procedural and affective questions, the investigator found that teachers ask a preponderance of DR questions. The ratio of DR to DR+ questions did not significantly change when the student reading achievement level changed from superior to low-average. These findings suggest an overall lack of variety in teachers' oral questioning techniques and a lack of teachers' oral questioning flexibility when reading achievement level changes.

A significant difference in the ratio of DR to DR+ questions was noted when the type of reading material being discussed changed from exposition to narration. Teachers asked significantly fewer DR questions in discussion of narrative reading material. This may result from teacher familiarity with narrative reading material because of consistent use of basal readers and guidebooks resulting in greater awareness of how facts directly recalled could be analyzed and evaluated.

Generally, the quality of DR+ questions was not such that they required a level of thinking much beyond the level of direct recall.

From the findings and from observation and analysis of teacher questioning traits mentioned in the study, it appears

that teachers are not very flexible in their questioning behavior in reading discussion groups. Implications drawn from this conclusion are included and suggestions for further research are offered.

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CHAPTER I

INTRODUCTION TO THE STUDY

I. STATEMENT OF THE PROBLEM

Current research findings concerning classroom behavior indicates that observation of teacher behavior could provide empirical knowledge of the teaching act. Since teaching behavior is a composite of many facets, it is suggested by Medley and Mitzel (1963) that the researcher abstract one facet for study. Taba (1964) in a study of classroom interaction as it relates to thinking in elementary school children cites the crucial nature of teachers' oral questions. She asserts that the questions teachers ask set the limits within which students can operate cognitively and set the expectations regarding the level of cognitive operations achieved.

She considers that it is through questioning that the cognitive processes are led beyond the level of direct recall. In the same vein Snyder (1963) points out that teachers use questions to lead pupils' thought to coincide with their own to reach a conclusion predetermined by the teacher.

If as Taba and Snyder suggest, teachers' questions do determine the level of cognitive thought in classroom interaction, and since teachers question regularly in the

reading lesson, then teachers' oral questions in the reading lesson could provide, for study, an area representative of the teaching act.

Although several authors have noted that many teachers equate reading comprehension with literal comprehension of the printed page, reading comprehension involves much more than this. Betts (1961) defines reading as thinking. He states that with a general purpose and specific questions pupils are ready to locate and evaluate relevant information and are made aware of facts and opinions. For Schwab (1958) reading is total involvement; a reader brings meaning to the symbols just as the symbols bring meaning to him. Reading not only involves interaction between the reader and the author but between them and a problem. Guilford (1960) states that the reading teacher has a wealth of opportunity to teach the child to think. Reading, according to Guilford, is one of our most complex intellectual activities and some reading must go beyond comprehension. He cites a need for skillful teacher-questions. Gray (1960; 1960a) lists four steps in the reading process: word recognition, comprehension, or grasping the literal meaning, reacting to and evaluating what is read, and a fusion of newly accepted ideas to past experiences real and vicarious.

Gray's concept of the reading process was taken to be the one included in A Reading Handbook (1964, revised 1968),

the curriculum guide for reading for the elementary schools of Alberta. Therefore, elementary teachers in Alberta should be aware that the reading process goes beyond word recognition and literal comprehension. It would seem though that if teachers hold a limited conception of the reading process their oral questions would be correspondingly restricted in the types of thinking they demand of the students.

It would follow too that teachers' oral questioning techniques should vary according to the demands of the situation of the moment, to the demands of the type of materials being read, to the level of cognitive development of the students being questioned, and to the needs of the students in that particular situation. Reading materials written for different purposes make different questioning demands upon the teacher. The quality of the questions asked relates to the expected cognitive level of the students' responses to the questions. Cognitive levels here refer to interpreting, inferring, and creative thought as being beyond the level of direct recall although each level perhaps begins with direct recall.

From the results of studies to date the problem seems to be that the proportion of teachers' oral direct-recall questions to those that go beyond direct recall is heavily weighted in favor of the former. The questions are therefore limited in the cognitive processes evoked in

the pupils by the questions asked. A question remains: Would the proportion of teachers' oral direct-recall questions to those requiring some analysis and evaluation in addition to direct-recall questions in reading classes change significantly if they were given reading material different from the primarily narrative texts of the basal readers, material which often offers more obvious opportunities to solicit answers beyond a direct-recall level. Is the teachers' oral questioning-behavior in reading classes inflexible regardless of the student reading achievement level and of the type of reading material read by these students?

II. PURPOSE OF THE STUDY

The purpose of this study is to investigate selected types of teachers' oral questions and the changes in the proportions of these question types asked when the type of reading material discussed with students of different reading achievement levels vary. More specifically, changes in proportions of types of teacher-questions asked when the type of reading material being discussed changes from exposition to narration will be investigated for the total teacher-question sample as well as for the teachers' questions to each grade five student reading achievement group, superior or low-average.

III. DEFINITION OF TERMS

Narration or Narrative Reading Material

A reading selection that is primarily the fictional account of an event or story will be termed narration or narrative reading material.

Exposition or Expository Reading Material

A reading selection that is primarily an explanation of how something is done will be termed exposition or expository reading material.

Question or Solicitation

An interrogative or declarative expression calling for a verbal reaction in relation to the expression is termed a question or solicitation. Although paralinguistic devices such as a head nod or a hand gesture can be termed a solicitation, only verbal statements will be considered due to the difficulty of the observer to record accurately the position of paralinguistic solicitations on a typed transcription. Any vocal solicitation is termed verbal.

Literal Comprehension

Literal comprehension is understanding the sense expressed by the actual wording of the passage read.

Superior and Low-Average Students

Designation of the students by the teacher as

superior readers and low-average readers for purposes of reading group instruction will be accepted for purposes of this study because the teacher's conception of the group reading achievement level may influence her teaching techniques for the group, particularly her questioning of students at different achievement levels.

IV. HYPOTHESES

The following null hypotheses were tested in this study.

- (1) There is no significant difference between the frequency of teachers' oral questions requiring direct-recall responses and those requiring analysis and evaluation in addition to direct recall.
- (2) There is no significant difference in the proportion of teachers' oral questions requiring direct-recall responses to those requiring analysis and evaluation in addition to direct recall when the type of reading material being discussed changes from exposition to narration.
- (3) There is no significant difference in the proportion of teachers' oral questions requiring direct-recall responses to those requiring analysis and evaluation in addition to direct recall when the student reading achievement level

changes from superior to low average.

- (4) There is no significant difference in the proportion of teachers' oral questions requiring direct-recall responses to those requiring analysis and evaluation in addition to direct recall when the type of reading material being discussed changes from exposition to narration in teacher-class discussion with the superior reading-achievement-student group.
- (5) There is no significant difference in the proportion of teachers' oral questions requiring direct-recall responses to those requiring analysis and evaluation in addition to direct recall when the type of reading material being discussed changes from exposition to narration in teacher-class discussion with the low-average-reading-achievement-student group.

Figure 1 illustrates the hypotheses of the study.

V. PLAN OF THE STUDY

To carry out the purpose of this study four reading selections, two primarily narrative and two primarily exposition, of equivalent readability and length were adapted for use by the investigator. Selections were of suitable readability and interest for either a superior or

| Null Hypothesis | | 1 | | 2 | | 3 | | 4 | | 5 | |
|--|--|----------------------------|-----|---|--|---|--|---|-----|----|-----|
| Compare | | Total Question Frequencies | | Proportions of Teachers' Oral Questions: | | | | | | | |
| | | DR | DR+ | When Type of a Reading Material Being Discussed Changes | When Student Reading Achievement Level Changes | In Discussion with Reading Achievement Students | In Discussion with Superior Achievement Students | In Discussion with Low-Average Reading Achievement Students | | | |
| Question Categories | | DR | DR+ | DR | DR+ | DR | DR+ | DR | DR+ | DR | DR+ |
| Narration Discussed with Superior Reading Achievement Students | | / | - | / | - | / | - | / | - | / | - |
| Narration Discussed with Low-Average Reading Achievement Students | | / | - | / | - | / | - | / | - | / | - |
| Exposition Discussed with Superior Reading Achievement Students | | / | - | / | - | / | - | / | - | / | - |
| Exposition Discussed with Low-Average Reading Achievement Students | | / | - | / | - | / | - | / | - | / | - |

Note: Compare A to B each time.

DR Questions requiring direct-recall responses.

DR+ Questions requiring analysis and evaluation in addition to direct recall.

FIGURE 1

NULL HYPOTHESES OF THE STUDY

low-average reading group within grade five during the eighth month of the school term.

Teacher-student group verbal interaction in classrooms was observed and tape recorded during the teaching of one primarily narrative selection and one primarily expository selection with each student reading group within the classroom, i.e. the superior reading group and the low-average reading group. Reading selections differed for each student reading group.

Tapes were transcribed and the typewritten transcription was analyzed to identify the 1,403 teachers' oral questions. From these questions a sample of 500 teachers' oral questions was chosen by random selection. The sample included subsamples of 125 teachers' questions from each of the following four contexts: teacher-class discussion of exposition with superior reading achievement students, teacher-class discussion of exposition with low-average reading achievement students, teacher-class discussion of narration with superior reading achievement students, and teacher-class discussion of narration with low-average reading achievement students. Teachers' questions were classified into categories calling for direct-recall responses and into categories calling for analysis and/or evaluation in addition to direct recall. Using a chi-square question category proportions were tested for significance to determine acceptance or rejection of the

null hypotheses.

VI. LIMITATIONS OF THE STUDY

(1) Question categories were set arbitrarily to meet the apparent needs of the study.

(2) The lack of a definitive line of demarcation between narrative and expository reading material is a limitation. For this reason selections chosen were said to be primarily narration and primarily exposition.

VII. SIGNIFICANCE OF THE STUDY

Before an existing situation can be remedied it is important to know what the situation is and what aspects of the situation need remediation. This is the basis of current interest in classroom interaction. Taba (1964) found that teacher awareness and training were aids to improved pupil ability to think. She cited teachers' oral questions as a crucial element in classroom interaction. Studies to date with the exception of Taba and Flanders (1967) have observed classroom interaction as it is while Taba and Flanders gave special training to teachers. The present study varied the achievement level within an individual grade and varied the context of the reading material discussed by the teachers and students in the reading class to allow teachers to use more variety in their questioning behavior.

The present study could have significance to the classroom teacher by drawing attention to the relationship between reading for literal comprehension and reading for comprehension beyond a literal level. Thus teachers could become aware that their questioning should be carefully planned and flexible to solicit from pupils a representation of answers which require thinking beyond the level of direct recall. It should be noted that the investigator realizes the need for direct-recall questions in the reading lesson but makes the assumption that their number should vary in proportion to other question types depending upon the reading-achievement level of the students involved and upon the opportunities different types of reading material present for comprehension beyond a literal level.

Findings of the present study by citing possible strengths and weaknesses of teachers' oral questions in relation to the reading process, as defined in the Reading Handbook (1964, revised 1968), could have relevance to inservice education for teachers in the field and for curriculum and instruction courses in teacher education.

VIII. SUMMARY

Current research findings in classroom behavior relate to determining what is happening at the classroom level in education so that realistic measures can be taken

to fortify its strengths and to overcome its weaknesses.

Taba (1964) cites the crucial nature of teachers' oral questions as determiners of the level of thought engaged in by the students. Reading authorities emphasize the complexity of the reading process. Teachers should be aware of this complexity through use of A Reading Handbook (1964, revised 1968) the curriculum guide for reading in Alberta's elementary schools. Do teachers vary their oral questions to suit the demands of the type of material read, the individual student, or the situation of the moment? Studies to date indicate that they do not.

This study was designed to investigate the frequencies and proportions of the types of questions teachers ask in different reading contexts, narrative and exposition, and with different student achievement levels, superior or low-average readers within grade five. Classroom interaction during discussion of selections assigned and read was observed and tape recorded. Transcribed protocol was analyzed to determine teacher flexibility in questioning.

It may be significant to note that before improvement in education can be wrought, *what is* within the classroom setting must be known for it is here that educational objectives are either met or not met. And it is here that *what ought to be* should be determined in relation to teacher education and practice.

CHAPTER II

A THEORETICAL BACKGROUND TO THE PROBLEM OF THE STUDY

Can a person teach so well that the world will remember him for twenty-three hundred years?

One man did. His method is spoken of to this day. He had no diploma, no degree. For him there were no schoolroom and no equipment, not even a teacher's desk. He gave no examinations, and did not trouble himself about grades or promotions. He just helped young people to think, that was all. But his doing this made him famous; and which is more, it made some of his pupils famous (Boraas, 1922, p. 1).

Boraas is referring to Socrates who stimulated and guided his pupils through the use of provocative questions. Aschner (1961) states that by asking questions and studying answers the teacher measures and evaluates the thinking and learning processes of her students. She asserts,

The classroom teacher probably devotes more time and thought to asking questions than anyone since Socrates. One might even say the teacher is a professional question maker (Aschner, 1961, p. 44).

Next to the family, Jackson (1966) tells us, the teacher-pupil relationship is one of the most pervasive social arrangements in society. If this is true, then a knowledge of classroom interaction is crucial to understanding the education process.

Teaching is characteristically a moral exercise; the teacher desires to improve the status quo in education. The teacher must, according to Taba (1967), give children

criteria with which to make judgments about what they experience. Professional competency is needed to assess pupils' learning needs and guide their development.

The goal in reading instruction should be improvement in teaching children to think. Margaret Conant (1942) points out that we should appreciate the extent to which the teacher's interpretation of the reading process will determine what practices are carried out in reading. A question to ask is: How do teachers define the reading process? They must be made aware of its complexity in relation to the levels of thinking involved in reading for different purposes. Indications are that they are unaware. The Interim Report of the Junior High School Subcommittee on Developmental Reading (1955) indicates that one-fifth to one-third of all junior high school students need some type of corrective reading. Kratzmann (1968) from classroom observation as an administrator points out that the reading program in the upper elementary grades does not receive adequate attention from classroom teachers. He was referring not only to the quantity of reading done but also to the quality or levels of thinking involved in the reading done.

In the light of these facts it would seem that, if as Russell (1961) and F. L. Smith (1965) state, the central purpose of education is the development of the rational powers of the individual student and teacher influence is

paramount in this development, then classroom teaching is a primary means of achieving educational objectives. As it is basic to every subject area, reading could be a chief means of developing critical thinking. Students could be taught through teacher questioning during reading lessons to see relationships within written material, to make inferences and interpretations, and to solve problems. And if as Aschner (1961, p. 44) points out, "the teacher devotes more time and thought to asking questions than anyone since Socrates," then reading, thinking, and teachers' questions can be an effective basis from which to observe classroom practice.

This observation seems to be a necessary must. Educators must know *what is* to form a basis of improvement for *what ought to be* in the establishing of goals and objectives for future curricula, of curriculum and instruction courses for prospective teachers, and of inservice education for teachers. The present chapter will present a theoretical background to selected psychological aspects of reading, thinking, and motivation as they relate to teachers' oral questions. This will be followed by a more practical analysis of the pedagogical aspects of the problems involved.

I. PSYCHOLOGICAL ASPECTS

An increasing knowledge of the theoretical constructs

behind the terms reading, thinking, and motivation, is essential to the competent practitioner. A competent practitioner in the context of this study can be regarded as the teacher who uses the oral question as a device to arouse student thought in its various facets, to stimulate it beyond the literal meaning of the printed page. As teachers' questions are also thought of as emotional devices, the theoretical construct behind this will be discussed under the heading of motivation.

Reading

Vygotsky (1963) points out that the process of learning written speech calls for a wholly new, very complex, course of development of mental processes that signifies an essential change in the child's general mental traits.

McDonald (1963) agrees. He states that learning to read is a complex process involving many behaviors ranging from learning to recognize the letters of the alphabet to being able to make a critical analysis of a novel. Each phase is in itself a complex integration of skills, attitudes and ways of thinking. McDonald further cites the fact that psychologists tell us that after a child learns to read, he is a different personality from what he was before he learned to read; his behavior system is more complex than it was. Each child responds to the experience of reading in a

different way; each develops his own reading behavior because each brings a different world of experience to reading. Because of this, teachers' oral questions should take student individual differences into consideration.

The complexity of the reading process goes beyond the process of *learning* to read. One must understand the process itself. Few will deny its complexity.

Gray's conception of the reading process (1960a) is particularly pertinent to Alberta teachers since it is his conception of the reading process which is included in A Reading Handbook (1964, revised 1968), the curriculum guide for the teaching of reading in Alberta's elementary schools.

For Gray the major components of the reading process are sequential in development beginning with word perception. He states that most reading activities can be classified into four interrelated and psychologically coherent headings. The first of these, *word perception*, depends on a memory of familiar words and the use of word attack skills. At this level word meaning and pronunciation are known.

Comprehension begins for Gray with grasping the literal meaning of what is read. This advances to securing an expanded grasp of the meaning, a recognition of implied ideas, and recall of related experiences. The third level of comprehension involves recognition of the author's

purpose or problem, recognition of generalizations and conclusions, their implications and applications. *Reacting to what is read* is the third major heading in Gray's model of the reading process. Here a standard of judgment is needed and the affective element of reading allows the reader to make an objective or a subjective judgment of what is read. Finally according to Gray there is a *fusion of new ideas and old*. This involves two levels of fusion, the revising or expanding of previously held concepts of understandings or the establishment of new insights or fresh ideas.

Gray's conception of reading illustrates the inter-relationship of reading and thinking. Awareness of this in teachers should encourage them to see implications for questioning beyond the literal meaning of selections read so that students use various levels of thought.

Others besides Gray have cited the complexity of the reading process. Thorndike (1917) regards reading as an elaborate procedure involving the weighing of linguistic elements in a sentence, organizing these elements to determine their relationship to each other, selecting the connotations they have in context, and finally the cooperation of outside forces from experience to answer questioning (reasoning). Resulting ideas are examined and validated to make sure they satisfy the mental set or purpose for whose sake the reading was done. Thorndike

stresses that reading should not be mechanical, passive, or undiscriminating.

Thorndike truly relates reading and thinking. His conception of reading gives tangible suggestions for teachers' oral questions beyond the literal meaning to the relationships and connotations presented in the selection read.

Guilford (1960) states that reading is one of our most complex intellectual activities. Using his well known structure of the intellect model, Guilford explains how reading fits into the various component parts particularly within the major types of thinking: memory, cognition, divergent, convergent, and evaluation. Teachers' oral questions during reading lessons could require thinking at each or any of these levels of thought.

Although psychologists such as Thorndike and Guilford agree with Gray's conception of the complexity of the reading process, many, notably the linguists, disagree. They argue that such a complex interpretation goes beyond reading and into the realm of thinking.

An application of educational theory to the teaching of reading in the light of knowledge from psychology and linguistics was attempted by Carroll (1964). For him reading is the perception and comprehension of the written messages in a manner paralleling that of the corresponding spoken messages. The activity of reading he analyzes as

two processes, *recoding* the written message into the construction of the spoken message or some internalization of it, and *decoding* or the comprehension of the messages so constructed. Carroll's conception of the reading process does not involve the complexity of Gray's, Thorndike's or Guilford's. He asserts that an important stage in the development of reading behavior is reached when the learner has mastered the important phoneme-grapheme correspondences, in other words, has broken the code. This is true but other aspects of reading are important as well.

For Carroll reading goes beyond word recognition; the teacher must learn to establish in the students the set or attitude that the printed page corresponds to spoken utterance. Thus for Carroll reading does not go beyond the literal meaning even though he stresses individual differences due to attitudes, background of experience, and aptitudes. Although Carroll does stress individual differences, his model of the reading process would not encourage teachers to question beyond the literal meaning of the selection read. For him going beyond the literal meaning would be outside what he would consider reading as such and into the realm of thinking.

Reading specialists other than Gray also stress the complicated nature of the reading process. Tinker's conception of the reading process (1965) involves recognition of printed or written symbols which serve as stimuli for

the recall of meanings built up by past experience and by construction of new meanings through the manipulation of concepts already possessed by the reader. The resulting meanings are organized into thought processes by the reader. Tinker's belief that meanings are built up from past experience is shared by Conant (1942) who states that the meaning of a word depends upon our experiences with its referents. *We read with our experiences.* Reading, she declares, is the art of using words as signs or symbols, as referents for objects, feelings, values, relationships, generalizations, and abstractions. But the word in itself has no meaning; the meaning is derived from our experience. Therefore, she cautions, the reader must try to deduce the author's meaning and must be alert to the application and misapplication of words.

Teacher awareness of the various facets of reading like those stated by Conant, should enable teachers to question in such a way as to alert students to greater depths of thinking in their reading and to relate reading material to their experience.

Batchelor (1960) agrees. She proposes that the reader bring his background of experience and intelligence to his reading to make a personal and intelligent response to what the author has to say. For her, the process of reading must be intimately related to the art of thinking well, clearly, fully, and critically. The child must read,

must like to read, and must react freely and intelligently to what he reads.

Student reaction can be brought about by teachers' skillful questions that stimulate students to elaborate at length.

The Interim Report of the Junior High School Subcommittee (1955) made the following assumptions regarding reading. Reading is a complex skill; each content area has reading skills particular to it; and in reading, individual differences are always evident. Teachers' oral questioning should consider these variables related to reading.

Russell (1961) points out that critical and creative reading are possible at all levels of the elementary school. His aspects of the reading process, like those of Gray (1960; 1960a), are sequential and complex. They involve the accurate perception of words and thoughts units, the understanding of literal meanings, the integration of ideas from past experience, the seeing of implied relationships, hidden meanings and reacting to symbolism, the developing of new ideas either appreciative or critical, and the use of these ideas in other activities.

Russell's conception of reading implies that teachers can question at critical and creative levels of reading at any grade level in the elementary school. Individual student differences determine the complexity of questioning at each

grade level.

Summary

By citing the above conceptions of the reading process as it is viewed by psychologists, linguists, and reading specialists, the complexity of the reading process was emphasized. The stress placed on past experience and the manipulation of concepts possessed to think and to organize content beyond the literal meaning adds to the complexity. This complexity must be realized by the reading teacher so that her questions during reading activities will vary enough to cover the various aspects of this process while allowing for individual differences in students because of past experience, aptitudes, and attitudes. The fact that different reading material makes different demands upon the reader adds to the complexity of the reading process.

Thinking

The task of teaching should be to develop many special abilities of thinking about different kinds of subjects. Improvement in one function of cognition or aspect of an activity influences the development of others only when there are elements common to both functions or activities. This is pointed out by Vygotsky (1963) when he explains that thinking is not a global process. Eash (1967) agrees. He cites five cognitive processes in reading.

They are understanding, utilizing, discriminating, chaining, and judging. *Understanding* Eash sees as the ability to decode the author's meaning without infusing it with individual experience. It is the essential base to use the other cognitive processes in reading.

Utilizing is the ability to take an understanding from one context and use it in another. The implication here is to teach to find generalizations. Eash terms the ability to subdivide and classify statements, and to find the author's purpose, *discriminating*. *Chaining* involves relating ideas to other ideas and to bring in past experience to bear on ideas read. Finally, Eash sees *judging* as decision making. Using internal criteria from within the selection and external criteria from other written material and from past experience, the reader judges the accuracy of information and the relevance and the authenticity of sources.

The teacher must help students to develop standards by which to judge internally the consistency of the selection read, and externally to compare with other writing for accuracy of information, for relevancy and authenticity. This can be done through well planned teacher questions.

The concept of global thinking is also denied by Carroll (1964a). He asserts that to define thinking a specific kind must be stated. Thinking can be linguistic as in language or non-linguistic as in music. Carroll lists

factors that determine if an individual will solve a problem. These factors include the individual's repertoire of relevant concepts, the concepts evoked in the individual by the structure of the problem, and the individual's skill in the manipulation of the concepts evoked. Thus like reading, thinking has a past experience base. Guilford (1960) in establishing his structure of the intellect model illustrates that thinking is not a global process. If teachers are made aware that this is so, their questions should become flexible to relate to each aspect of the thinking process.

Taba (1964, p. 21) defines thinking as,

an active transaction between the individual and the demands of his environment which is neither fully controlled by environmental stimulation nor wholly independent of some mediating intervention.

Basic to her concept of thinking is the idea that thinking occurs in sequential steps. She suggests a sequence of learning experiences in developing thinking processes. They are: grouping and classification of information; interpretation of data and the making of inferences, application of known facts and principles to explain new phenomena; prediction of consequences from known conditions and events or development of hypotheses by using known generalizations and facts. All three involve sequential steps in abstraction and complexity and each involves different levels of intuitive and conscious awareness.

These sequential steps are important to consider student individual differences when teachers question during the reading lesson.

Taba's conception of sequential learning experiences extends to child development. Like Piaget (1965) she sees growth in thinking as developmental. Others such as Carroll (1964a) and Russell (1961) share this view. Taba cites Piaget's concept of accommodation and assimilation that is implicit in her definition of thinking, and points out that prolonged assimilation of facts retards the maturation of thinking. Students need some assimilation to have the "*stuff*" with which to think, but Taba adds, they also need challenge to stretch their modes of thinking. Taba points out a need for a balance, an adequate concept of readiness and pacing. Taba believes that to lift thought prematurely is a poor idea as it may cause confusion and regression but she disagrees with Piaget's conception of the age of formal operations. She asserts that this occurs as early as grade two in some students. Therefore, she contends, there is a need to consider individual differences as to the number of concrete examples necessary depending upon the level of intellectual development.

Taba's conception of thinking as an active interaction, as a cluster of cognitive processes, and as a developmental process has implications for the teacher of reading in the formulation of her questions. Her teaching

should be diagnostic so that she can determine the level of cognitive growth of each individual student and structure her procedures accordingly. A study by Taba (1964) in which teachers were trained to be aware of teaching strategies confirmed that the improvement of cognitive skills through teacher awareness can be a reality. The fact that all pupils in her study gained proved that even slow pupils are capable of abstract thinking under a program geared to their needs and providing sufficient opportunities to deal with the concrete before making the transition to the abstract. In this same vein Sanders (1966) points out that differences in the level of thinking for grade level should depend on the complexity of the thinking rather than on the kind. He asserts that all types of thinking are possible with any students only that level of difficulty should increase as the grade level increases.

Russell (1961) asserts that the teacher may distinguish between a child's materials of thinking (percepts, concepts, images and memories) and his processes of thinking (perceptual, associative, convergent problem solving, critical thinking, and creative thinking). He suggests that critical thinking is within the grasp of elementary school children. Like Taba, he disagrees with Piaget that children are less capable of reasoning at an abstract level until eleven or twelve years of age. Russell states that this restriction

is due to the problems that Piaget presented. The inappropriateness of Piaget's problems is also cited by Vygotsky (1965). All agree though that the development of critical thought is gradual, continual, and uneven. This implies that teachers must, in questioning, consider student individual differences.

The Herbartian psychology that alleged that the mind is made up of faculties to be trained by different tasks was cited by Boraas (1922). He pointed out that this concept of thinking assumes that our cognitive functions are habitual and instinctive. But Boraas insists that thinking as a form of behavior and skill needs to be developed in specific aspects of thinking. Teachers in questioning must be aware of the deterrents to thinking. Boraas lists them as: fears (these may be teacher induced), monotony, drudgery, superstitions, customs and traditions, conventions, slavery to rules, subjection to authorities or text books, and slavery to details. Boraas claims that teachers try to promote pupils' welfare by doing their thinking for them. Teacher-questions may be so phrased that they solicit only the students' consent to the teachers' thinking.

Summary

The ability to think like the ability to read is associated with past experience. Thinking should not be

thought of as a global process. It is a complex of distinguishable skills that are sequential, gradual, and uneven in order of development. Although thinking has a past experience base, students can go beyond this by manipulation of concepts. Unlike Piaget some of the authors cited state that pupils can use most types of thinking earlier than stated in Piaget's theory; difference depends on the complexity of thinking rather than on the kind. Guilford (1960) stresses that teachers must recognize that a pupil's intellect is an organized collection of distinguishable skills each with certain properties. Teachers are in a good position to decide what kind of exercises are needed to develop those skills and Guilford stresses the need for skillful questions. A teacher can phrase her questions to initiate different types of thinking.

Motivation

Since teachers' oral questions can be viewed as motivators of thinking, the theoretical construct behind them will be discussed under the heading of motivation.

What is motivation? Jenkinson (1964) comments that no two definitions appear to agree but most psychologists appear to accept the notion that both internal and external stimuli urge an individual to act.

In an article reinterpreting traditional concepts of

motivation Hunt (1960) insists that such traditional conceptions of motivation as homeostatic needs, painful stimulation, anxiety, habit and curiosity are not enough. He cites Hebb's notice of an *optimal level of activation* below which increased stimulation is reinforcing and above which decreased stimulation is reinforcing. Studies carried out at McGill seem to confirm Hebb's notion. Students were paid to participate in an experiment which eliminated all external stimulation. When students could not tolerate the lack of external stimulation, stimulation became reinforcing. Hunt also points out that contrary to the traditional opinion that fear and anxiety are always congruent to traumatic experience, they are a part of accrued past experience. Further Hunt advances Festinger's concept of motivation by the incongruity-dissonance principle. Slight degrees of incongruity are readily accommodated and add interest whereas larger amounts are repelling. Carroll (1964b) claims that Festinger's idea of incongruity-dissonance can be used to establish instructional set; the child's thinking is thus motivated by a need to solve problems. Teachers can arouse incongruity-dissonance in students through the use of skillful questions.

Carroll (1964) also points out that the reader must have a reason to learn to read and that he must find pleasure and satisfaction in the task. For this reason motivation is

important. Conant (1942) agrees. She alleges that the motive for reading must come from the student feeling a need to secure and to use the facts needed for the solution of some of his own problems. Implications for the teacher are pointed out by Sears and Hilgard (1964). They state that the teacher must have a suitable emotional climate in the classroom, evoke problems not apparent to the children, stimulate a problem solving climate involving search and not focus on one answer. Activities should capitalize on cognitive motivation, self-set goals, stimulation of divergent thinking and some dissonance. Getzels (1964) hypothesizes the same things. If a student lacks stimulation, he will seek it. The implication is that instructional methods and materials should provide students with opportunities to explore, create, question, discover, raise hypotheses, and draw conclusions. Skilful, well-planned teachers' oral questions can provide these opportunities as well.

Motivation, like thinking and reading is an individual type of thing. Children respond individually to different kinds of motivation; to serve all a teacher should be flexible. McDonald (1963) points out that the teacher is limited in the number of incentives she can use. She cannot assume that any one incentive will motivate all children. He states that teacher flexibility demands that she must learn to use incentives in a variety of ways and

expect different results from different children. This is true of teachers' questions.

Motivation cannot be considered as a temporary device to stimulate interest. It must be, according to Hilgard and Russell (1950), an intrinsic part of the learning situation that considers the need of the child in the social situation in which he lives and which continually changes as the child develops. Here again diagnostic teaching is important. McDonald (1963) proposes that through observation a teacher infers that certain incentives will motivate. After inferring, re-observation is important to assess the accuracy of the inferences made. The accuracy of the inferences is dependent on the reliability of the observations. With this procedure the teacher can determine the effective use of oral questions in allowing for individual differences.

Jenkinson (1964, pp. 49-57) explains five psychological aspects of motivation. Her explanation is geared to the reading teacher. The five aspects are:

1. Cognitive drive, which is the need to satisfy curiosity. This seems related to intelligence and is therefore a reason for differentiating instruction.

2. Socialization is as important as cognitive drive in beginning reading. Included in this aspect is the individual's need for self-esteem and self-actualization, his acceptance by the group.

3. Achievement is an important aspect in our achievement oriented society. The teacher should make sure that both long and short term

goals are realistic in terms of the individual and the group.

4. Interest has a central position in any type of learning. It directs and focuses attention.

5. The individual nature of reading is motivating in the sense that it can be a "point of repose" to overcome the over-stimulation of today's mass media. This would relate to returning the individual to what Hebb calls the "optimal level of activation."

The implication is that teachers should satisfy these aspects in oral questioning. Student individual differences must be considered. No child should be placed *on the spot* with a question. Questions should challenge, should focus attention, and should arouse interest.

Summary

Although there seems to be no clear cut definition of motivation, psychologists and educators agree that it is a complex concept. Hunt (1960) points out that degree of motivation must be considered, when he cites Hebb's notion of an *optimal level of motivation* above which a decrease in stimulation is motivating and below which an increase in motivation is stimulating. This is also stressed by McDonald (1963) who asserts that a child seeks motivation if stimulation is lacking. Others such as Carroll (1964), Hunt (1960) and Jenkinson (1964) cite Festinger's incongruity-dissonance theory of motivation in which he states that the correct degree of incongruity creates interest.

Motivation is an intrinsic part of the learning situation. Conant (1942) stresses the importance of classroom environment and the affective dimension of motivation. Motivation is individual; each student reacts individually to different motives.

Jenkinson (1964) mentions five psychological aspects of motivation of interest to the reading teacher. They are: cognitive drive, socialization, achievement, interest, and the individual nature of reading. Factors influencing motivation outlined by McDonald interrelate with Jenkinson's psychological aspects of motivation. They include home factors, culture, developmental level of the student, school factors, societal factors, experience, social class, and the goal itself.

The complexity of the motivation process perhaps cannot be completely understood by the teacher but her awareness of its place in learning seems essential to her efficiency in teaching generally and in questioning specifically.

II. PEDAGOGICAL ASPECTS

Having discussed the psychological bases for reading, thinking, and teachers' oral questions, the investigator assumes that the teacher might now ask for a more practicable analysis of the problems involved. This analysis is viewed from the perspective of teachers' oral

questions as motivators of thought in reading.

Teachers' Oral Questions as Motivators of Thought in Reading

The role of questions becomes crucial, and the way of asking questions far the more influential single teaching act. A focus set by the teacher's questions circumscribes the mental operations which students can perform, determines which points they can explore, and which modes of thought they learn.... Asking questions to which only one right answer is possible builds, in addition, a convergent mind -- one which looks for simple "right" answers and depends on authority rather than on rational judgment (Taba, 1964, p. 53).

After asserting the crucial role of questions and the way they are asked, Taba goes on to state the importance of questioning strategies or planning questions for specific purposes. She points out questions are needed that are open-ended yet with a focus that is perceptible to the students. Questions should permit spontaneity and participation in the search by students of all abilities, allowing individuals to respond in terms of their own perceptions and thought instead of those of the teacher. Combining appropriate degrees of constraint and freedom, questions can be "stepping stones for the transitions from one mode of thinking into another". They set the pace and guide the search. If teachers' oral questions focus on final answers rather than involving thought, the pace of development of skills and thought is slowed.

Much study relating to teacher influence in the

classroom and to classroom interaction has been done by Flanders and his associates (1965, 1967). Flanders developed an observational system for the analysis of classroom instruction. Teacher influence he categorized as direct or indirect. Direct influence involves the stating of ideas or opinions, directing pupil action, criticizing pupil behavior, or justifying teacher authority. Indirect influence involves the teacher soliciting opinions or ideas from the pupils, applying or enlarging on those opinions, praising or encouraging pupil participation, clarifying or accepting pupil feelings. Questions were included in indirect influence. Although Flanders found that indirect influence amounted to approximately one-third of all teacher influence, his question category was broad and all inclusive.

Amidon, an associate of Flanders, in cooperation with Hunter (1967) describes a modification of Flanders observational system. They broadened the question category into two aspects: narrow questions and broad questions. Narrow questions are defined as those in which the general nature of the response is predicted. Broad questions are defined as relatively open-ended. In another article reviewing recent developments in interaction analysis, Amidon and Hunter (1967a), further modified categories within Flanders observational system. The question category was broadened into four subsections adapted from Gallagher

and Aschner (1959). They include cognitive memory questions, convergent questions, divergent questions, and evaluative questions.

These question categories could relate to the question categories as defined by the investigator in chapter four of this study. Cognitive memory questions could correspond to memory questions; convergent questions could correspond to reasoning questions; divergent questions could correspond to creative thinking questions; and evaluative questions could correspond to judgment questions. Since procedural and affective questions were adaptations by the investigator, they have no counterpart in Aschner's work.

Flanders (1967) cites studies by Withall and by Lippincott and White who found that teacher-pupil relationships are essentially superior-subordinate in quality. Both teacher and pupil expect the teacher to take charge. Flanders asserts that indirect influence increases pupil independence. Since teachers' oral questions are classified as indirect influence, the importance of efficient questioning is implied. For this reason the questioning facet of classroom interaction appears to be a valuable point from which to view the quality of classroom interaction within indirect teacher influence.

Two prerequisites of a good reading teacher are set by Batchelor (1960). They are a genuine enthusiasm for

reading and the ability to establish good rapport with the reader. She stresses that from the beginning the student must be trained for difficult reading and critical thinking. This can be accomplished by posing penetrating questions. We must expect and permit the student to think, react, and criticize, even though their comments may differ from the viewpoint of the teacher. But the teacher must be alert, Batchelor goes on, verbalization by the student may be deceiving. Carroll (1964b) cites James who found that children may not know an answer but be able to give a parrot-like response. In other words, the children can recode to oral language but cannot decode the message it conveys.

Carroll further stresses that the attainment of concepts is not based on concreteness or abstractness but on the number of stimulus properties perceived by the subject. Taba (1964) points out that unclarity of questions leads to guessing and to adoption of unproductive arbitrary models of thinking, a dependence on memory rather than judgment and inference.

Motivation should keep curiosity alive. Questioning strategies should establish a set to learn. Sears and Hilgard (1964) allege that the only motivational device needed is to ask the right questions and not to stifle curiosity by sticking too closely to facts that are to be memorized.

Teachers seem to be remarkably stable in their patterns of classroom discourse. Researchers such as Bellack and Davitz (1965-1966) have found the most common pattern of interaction to be solicitation-response; the teacher solicits -- the pupils respond. Aschner (1961) claims that teachers' questions can be phrased to elicit different kinds of behavior. In the same vein, Nuthall and Lawrence (1965, p. 2) state,

Learning to think is a process which depends in part on the demands made upon the pupils by the teacher and on the ways in which the teacher guides and modifies the pupils' responses.

Thus cognitive interaction between the teacher and the pupil seems to be the heart of instruction. Guilford (1960) points out that the reading teacher has a wealth of opportunity to teach the child to think. He stresses the importance of teachers' questions. They are especially influential in the progress of thought. Questions appear to set the limits of thought and operations. Taba (1967, p. 407) insists that "teachers get in proportion to what they seek."

Intrinsic motivation gives set. Betts (1961) declares that teachers must preplan to initiate the student into the process of inquiry. The purposes of effective questions are listed by Struck (1962, p. 27); motivation, arousal of curiosity and interest, to focus attention on main points, to serve as guides in discussion, to promote

initiative and originality, to encourage learning activities, to develop attitudes and ideals, to guide habit formation, to further insights and appreciations, to review and tie in previous learnings, to establish teacher-pupil communication, to evaluate effectiveness of instruction, and to diagnose individual progress and difficulties.

It would appear then that the purpose of teachers' oral questions goes beyond motivation, and perhaps McDonald (1963) was overly optimistic when he stated that effective questions are the only necessary motivation.

Summary

A pedagogical view of teachers' oral questions as motivators of thought in reading relates to active pupil participation at their own ability level. Taba (1964) stresses the importance of spontaneity and open-endedness yet focuses in teachers' oral questions. She points out that unclarity of questions leads to guessing and adoption of unproductive models of thinking and to dependence on memory rather than on judgment. Sears and Hilgard (1964) agree when they point out that questions that stick too closely to facts to be memorized stifle curiosity. Others such as Batchelor (1960) and Carroll (1964) declare the need to let pupils think, react, and criticize even if their views are different from those of the teacher.

Taba (1964), Guilford (1960) and other emphasize that teachers' oral questions set the limits of thought and operations but that through questions the reading teacher has a wealth of opportunity to teach pupils to think. Preplanning for effective questioning is stressed by Betts (1961). The purposes of teachers' oral questions goes beyond motivation. Other purposes listed by Struck include arousal of curiosity and interest, to focus attention on main points, to serve as guides in discussion, to promote initiative and originality, to encourage learning activities, to develop attitudes and ideals, to guide habit formation, to further insights and appreciations, to review previous learning, to establish teacher-pupil communication, to evaluate effectiveness of instruction, and to diagnose individual progress and difficulties. The investigator would like to point out that an aspect of education so broad in scope and with such extensive purposes is worthy of inquiry.

III. CHAPTER SUMMARY

This chapter has been an attempt to view the theoretical constructs behind reading, thinking, and motivation as they relate to teachers' oral questions.

Reading was found to be a complex process, its components hierarchical in development. It was stated by several authors that pupils read from experience; they

bring their experiences to reading and gain experience from it through the manipulation of the concepts involved. This has implications for individual differences in reading because each individual brings different aptitudes, experiences, and attitudes to reading. Reading and thinking are parallel processes; therefore, reading is never a passive process.

Thinking like reading is past experience based. It is complex with many components that are developmental in nature from concrete to abstract. This has implications for readiness and pacing in instruction. Here too the teacher should be aware of the need to teach for individual differences.

In discussing motivation, it was found that the traditional conception of motivation was not enough. Stimulation, under-stimulation, and incongruity-dissonance were also found to be motivating. The teacher should see the necessity of establishing an instructional set through intrinsic and extrinsic motivation. Effective questions can be either. Because motivation too is individual and developmental in character, teacher flexibility in questioning is essential.

Teachers' oral questions as motivators are considered by many researchers to be crucial. Definite questioning strategies should be developed by the teacher. Questions should be focused in order to establish in the student a

set to learn. Although teachers were found to be remarkably stable in their classroom discourse, the necessity that questions should be diagnostic, instructional, and provokers of different types of thought did not seem to be recognized.

CHAPTER III

A REVIEW OF RELATED LITERATURE

A review of related literature will examine selected research from investigations of classroom interaction in relation to teachers' oral questions. Professional opinion relating to classroom interaction as it relates to teachers' oral questions will also be noted. This will serve as a basis of what is already known in relation to teachers' oral questions in the classroom situation.

Suggestions by researchers and by authorities in the reading field as to what the classroom situation ought to be in relation to teachers' oral questions are reviewed as well. They are reviewed to give an indication of what to watch for during the observation of classroom interaction during the reading lessons observed in this study.

I. THE EXISTING CLASSROOM SITUATION IN RELATION TO TEACHERS' ORAL QUESTIONS

This section will review literature that relates to teachers' oral questions as researchers and professionals in the field of reading have seen the existing classroom situation. Since the present study involves observations of classroom situations in reading lessons, it was considered necessary to review literature that related to

existing classroom situations as a guide to observations.

One of the great age old mediums of instruction is the art of questioning yet few teachers can be found who practice this fine art effectively (Struck, 1962, p. 26).

Most observers of classroom behavior from Stevens (1912) to Guszak (1967) would agree with Struck's statement. Amidon and Gianmatteo (1965) did, however, point out the difference between average and superior teachers. Superior teachers, chosen on the basis of administrators' opinions, were found to ask more open-ended questions and to demand more pupil verbal participation.

Teachers dominate classroom verbal interaction. In 1912, Stevens found that teachers were responsible for two-thirds of all spoken moves. The recent findings of Bellack and Davitz (1965-1966) and Flanders (1965) among others, found no change in this proportion. Little advancement seems to have been made. Even in a private elementary school that was supposedly child centered, Jackson's findings (1966) after two months of observation cite teacher domination to the same extent as stated above. Flanders calls it the rule of two-thirds. That is, in passing any classroom you will find that two-thirds of the time someone will be talking, two-thirds of the time it will be the teacher talking, and two-thirds of the time the teacher will be using direct methods, lecturing. Therefore, the remainder of the time the teacher is using indirect

methods which include questioning. Teachers' questioning behavior then should provide a worthwhile area for study.

Teachers seem to regard themselves as manipulators of student behavior. Aschner (1958) likens this to Skinner's psychological concept of operant conditioning. The teacher questions; the student responds. That such appears to be the case tends to be shown by the few questions children ask in the classroom setting. Dodl (1965) points out that a child questions continually until age five. The child's questions are the tools with which he structures his environment. They are an important part of his independent learning; therefore, Dodl implies that one of the ultimate goals of education should be to develop those abilities to aid the individual in independent learning. His study found that such is not presently the case. Total pupil questioning incidence is low; typical teacher response to pupils' questions was informational tending to discourage further pupil questioning. Floyd (1960) found the ratio of teachers' questions to pupils' questions in primary classrooms was 93:7. High school students tend to fare no better. Corey and Fahey (1967) in term long observations of high school science classes had difficulty obtaining enough students' questions for analysis. Most questions cited related to classroom procedures. The ratio of teachers' oral questions to pupils'

oral questions will be noted as a first step in the report of this study.

Regardless of the fact that they tend to look upon themselves as manipulators of student behavior, teachers in their questioning seem to ignore individual differences. Such were the findings of Stevens (1912), Dodi (1965), Flanders (1965), and Boraas (1922), although Adams (1964) and Amidon and Gianmatteo (1965) did find some modification of teacher questioning techniques to allow for different ability groups. Observation of teachers' variation in questioning to allow for individual differences will be made in the study reported here.

Even with the modification cited above, most researchers will agree that teachers' questions are unplanned. F. L. Smith (1965) found a lack of precision in teachers' questioning. Struck (1962) points out that few teachers plan their questioning. In theory educators want pupils to analyze, evaluate, and reason. But practice does not seem to allow for this. Stevens (1912) protests that the large number of teachers' questions is a symptom of poor instruction. She found that many of the questions asked by teachers have little or no logical significance.

Medley and Mitzel (1963) agree when they state that many teachers' questions are designed not to evoke thought but merely to keep classroom activities moving along.

Jackson (1966) and Kliebard (1966) found that approximately thirty per cent of teachers' questions were procedural in nature. In the present study the proportion of procedural type questions will be viewed under a combined procedural and affective question category.

Further evidence that teachers' oral questions are unplanned is seen in Ringham's study (1965). As a principal, he observed the questioning techniques of thirty or more full time teachers. He found that teachers tend to overuse good students, to overdo repetition, and to fail to note the extent of pupil participation. Possible overuse of good students will be noted in the present study.

Ambiguity in teachers' oral questions was found by Nuthall and Lawrence (1965), Taba (1964), and F. L. Smith (1965). F. L. Smith states that this may be because the teacher is interested in only one answer. He further points out that teachers expect a limited and immediate response. This, he asserts, places a restriction upon the types of students' thinking. Smith found few moves by the solicitor that describe a range of possible alternative answers. Because he assumes that teachers tend to accept the authority of the textbook, Smith insists that they do not see that the range of possible true answers and the range of acceptable answers is not necessarily the same. Smith and Meux (1959) found that teachers and pupils

rarely question explanations given in the text even when the criteria are inappropriate. Authority of the textbook accepted as such forces pupils to reflect the author's thought or what the teacher has in mind (Stevens, 1912). She asserts that the teacher does the reasoning for the pupils by structuring the questions too much. In her study she found that teachers accept fragmentary answers and then enlarge upon them. Snyder (1963) agrees, commenting that the teacher leads the pupils through her thread of thought to the one answer that she wanted. Guszak (1967) found this to be the case ninety per cent of the time. Dependence upon the written text by teachers that leads to congruence of student response will be cited in this investigation.

Guszak called it *congruence of response* and alleges that such dependence on direct recall often leads pupils away from the unity of the selection read. He investigated incidence of teachers' oral questions that related to reading comprehension in grades two, four, and six. He found approximately seventy per cent of teachers' oral questions required responses at the literal comprehension level of passages read. A single congruent student response was required. This percentage decreased as grade level increased. Guszak used what he called a Question Response Unit (QRU) to analyze his data. His findings showed that a question followed by a single congruent

response (QR+) was by far the most dominant pattern. Teachers tended to use a *set the purpose* question then repeated it in a manner that called for a response. QRU's that called for verification, judgments, or justification of answers were very few in number. Guszak concluded that most teachers' oral questions dealt with the lowest level of literal comprehension, direct recall. He sees this in the QR+ because the student becomes programmed to narrow channels of thinking. Teachers' oral questions in the present study will be categorized according to the type of thinking demanded. A large incidence of incongruent responses was accepted as congruent by teachers and Guszak concluded teachers did not know these answers themselves. This he warns perpetuates habits of inattention and careless thought. Accepted answers will be examined in this study for incongruence and correctness.

Most studies of teachers' questions have found that regardless of the subject taught, the grade level, or the achievement level of the students, the majority of questions asked by the teacher call for direct recall responses. Percentages vary but most studies found that direct recall type questions amounted to more than fifty per cent of the comprehension questions asked. When such is the case Floyd (1960) points out, there can be little real interest or serious thought by the pupils. Stevens

(1912) found no emphasis on questions considered by the teachers to be more important. All questions tended to be asked as though equivalent in importance.

Summary

Studies have shown that teachers tend to dominate classroom verbal interaction. It was also cited that teachers regard themselves as manipulators of pupil thought and lead pupils through the teachers' own thread of thought to the *one* answer they want. They seem to assume the authority of the textbook and seek answers at a direct recall or literal level of comprehension. In this respect teachers tend to expect a limited and immediate response. Researchers find that teachers' oral questions for the most part are unplanned and are frequently ambiguous. Overuse of good pupils by teachers and a tendency to ignore individual pupil differences was also cited by researchers into classroom interaction.

II. SUGGESTIONS FOR IMPROVING THE EXISTING CLASSROOM SITUATION IN RELATION TO TEACHERS' ORAL QUESTIONS

This section will review literature in which researchers and professionals in the field of reading and education offer suggestions for improving the existing classroom situation in relation to teachers' oral questions.

The present study will consider these suggestions to determine if some of them are presently being used in the classrooms observed.

At present, there is a serious need of intelligent study and careful supervision of the use of the question as a medium of instruction. Skillful supervision of questioning will of necessity force a unification of aims, better organization of subject matter, more consistent methods of instruction and more rational practice, for these all stand revealed in teachers' questions (Stevens, 1912, p. 86).

Stevens goes on to state that questioning should have a place in the training of every teacher as a means of joining theory and practice. Questions, she continues, should stimulate reflection, should be adapted to the experience of the pupils, and should allow time for reflection to call forth a well rounded thought. To do this, Stevens suggests that the teacher should prepare a backbone of a few thought provoking questions with every lesson.

Although Stevens saw in 1912 the need to improve questioning strategies, the need seems still to exist. The goal should be the improvement of thinking. Betts (1961) stresses that the teacher must preplan to teach pupils to think in different situations and to recognize that word meanings shift. This could be accomplished through effective questioning.

Sanders (1966) declares that teacher awareness of

questioning techniques can create improvement. He developed a taxonomy of questions as a teacher aid to more comprehensive questions to incorporate all facets of thinking. In his taxonomy he points out that there can be simple or complex questions within each category of thinking. Differences in questioning for grade level or for individual differences in learners, Sanders insists, should depend on the level of difficulty of the kind of thinking involved rather than on kind alone. But he stresses that concern about the quality of thought demanded by classroom questions is inadequate for a total philosophy of education. The emotional atmosphere of the classroom has a great deal to do with the learning that may result. Educators must consider the whole child not just his mind. This was also mentioned by Jenkinson (1964), McDonald (1963), and others cited in chapter two of this thesis. The present investigation will not attempt to determine the level of thought demanded by teachers' questions in discussion with different student reading achievement levels but will in categorization of the teachers' oral questions consider the kind of thinking demanded. The affective atmosphere of the classroom will be observed as well.

Sanders (1966) states that the memory category of questions is indispensable in all levels of thinking but has three weaknesses. They are: the rapid rate of

forgetting, the knowledge memorized does not necessarily represent a high level of understanding, the concentration on memory means that other intellectual processes are neglected. He suggests teacher planning of questions in conjunction with planning of units. Attention to definitions, generalizations, and values, he states, are vitally important in framing good questions. One of the purposes of this study is to determine if teachers do depend heavily on memory questions that require direct recall responses.

One investigator, Taba (1964), looked at the classroom situation to evaluate teacher productivity, and then trained teachers in the analysis of thought processes and in devising strategies for the development of thought processes. Her preliminary analysis reveals the enormous influence of teacher behavior on the thinking of students by the nature of the questions asked, and by what the teacher gives and seeks in her questions, the timing and emphasis of them. A training period of ten sessions was given to participating teachers. The training period included five pre-term sessions and five sessions dispersed through the term. Twenty elementary school classrooms participated. Pupil variables considered were intelligence quotient, socio-economic status, and achievement in reading and social studies. Taba found a rapid maturation in thinking; all pupils gained regardless of the variables

involved. Teachers were aided by the employment of conscious thought provoking strategies. Results indicate that acquisition of skills in autonomous thinking is a realistic goal and that planned questions could aid in its development.

Other investigators who related their findings in a book of readings, edited by Amidon and Hough (1967), have done research related to teacher preparation for improved classroom interaction. Their work involved both preservice and inservice education. Experimental and control groups were used to investigate the effectiveness of teacher training in the use of Flanders' system of interaction analysis cited in chapter two. Teacher attitude seemed to play an important part in gains made by teachers. Teachers who already used the most indirect influence in their classroom behavior were more open to suggestions made to them in the teacher training.

Research involving cooperating teachers and their student teachers proved particularly relevant to finding improvement in interaction through training in the use of Flanders' system of interaction analysis. Training for both cooperating teacher and student teacher proved to be the most effective because it resulted in better cooperation between the two. Since student teachers were found to emulate their cooperating teachers, the training tended to present them with a better model of whose verbal behavior

they were objectively aware.

No teacher education in interaction will be involved in the present study but teacher attitudes toward teacher education will be solicited.

F. L. Smith (1965) points out that recent innovations in education demand more competent questioning. Taba (1964) illustrated that teacher awareness and planning can be aids to improvement in questioning competency. Ringham (1965) suggests that teachers plan their questions and keep a checklist to record pupil participation, to be more definite in questioning and to put more thought into the questions asked.

Melnik (1965, p. 38) puts it this way:

Perhaps in this changing world of expanding knowledge, it is more important to learn how to formulate significant questions than it is to know *all* the answers.

The question as a tool in teaching should have two main functions, Melnik continues, diagnostic and instructional. The teacher should understand the function and the pupil should be aware of the purpose of stimulating thinking and of increasing students' awareness of the reading process. Diagnostic questions can be the basis of planning individual instruction while instructional questions guide the reader to select, organize, and relate the author's pattern of thought. The fact that teaching, hence questioning, should be diagnostic is

stressed by others such as Taba (1964), McDonald (1963), Johnson (1965), and Jenkinson (1964).

During observation and taping of the reading lessons involved in this study the investigator will note if the teacher and the pupils seem to have a purpose beyond gaining literal comprehension of the selection read.

Aschner (1961) asserts that to design good classroom questions the teacher needs to begin by analyzing and planning the kind of thinking task to be set. Precision and clarity of the wording will focus the thinking on its task. In the same vein, Shaw (1965) points out that it is within effective questioning that teaching is an art. It is through such an art that teachers can help students to develop more critical attitudes toward what they read, to teach them to be selective in their choice of reading materials and to judge the merits of what they hear and read. In the present study, the investigator will note teachers' questions that promote a critical attitude toward what is read.

Perhaps, as Taba (1964) points out, teacher awareness of questioning strategies and teacher education in the use of these strategies are the key. Struck (1962) presents a checklist for effective questioning that is one of the elements of what should be in the present classroom. From Struck's checklist an effective question could be defined as being global to stimulate all to think, adapted to the

group's needs, and not suggestive of the right response. Such teacher questions will be noted in this study.

Teacher awareness of questioning strategies is stressed by Nuthall and Lawrence (1965) when they state that if the teacher is to be helped in stimulating children in her class to think and in providing them with models through her use of language, she needs to become sensitive to the nature of the demands made by her questions. The way in which children respond to these demands determines the procedures through which the teacher can direct this verbal action more skillfully to demand higher levels of student thought.

Reading authorities such as Niles (1965) and Helen Smith (1967) stress the importance of organization and structure in different types of reading material. Niles declares that by the use of judicious questions a teacher can encourage students to pay attention to the structure of what they read. Taba (1964) states that research in teaching cites a lack of differentiation between different types of learning; principles relevant to one are applied to all. Helen Smith's study (1967) observed the response of high school students asked to read for different purposes, such as for details and for a general impression. The majority of students in her study did not remember having been taught to read for different purposes. Smith stated that purposes for reading were set largely through the

questions that the subjects thought the teacher might ask. In conclusion Helen Smith (1967, p. 82) suggests:

... teachers should ask a wide variety of questions requiring different kinds of responses. This study showed that the teacher's questions and examinations are important determiners of the manner in which students read. It further pointed out that the preponderance of questions asked by teachers were those requiring students to recall details or factual information. Direct evidence of this fact was shown in the ability of good readers to answer questions of details accurately and competently.

The present study uses differentiated types of reading material to determine if teachers do recognize the demands made by different types of reading material. This will be determined by noting if the teachers' questioning varies with the different types of reading material being discussed with the students.

A paper by Waimon and Hermanowicz (1965) has suggestions for teacher education. They propose that prospective teachers be provided with an opportunity of analyzing classroom behavior. The authors had difficulty training young people to use a system of analysis to rate teacher evaluation of pupil response. An alternative system of analysis might be found so that this method could be beneficial in teacher education.

As a final point under suggestions for what the classroom situation ought to be in relation to teachers' questions, it seems pertinent to add that perhaps there ought to be fewer teachers' questions and more pupils'

questions. As various researchers suggest teachers questions should be fewer and more focused. They should encourage pupils to question and to seek answers to their own questions. The proportion of pupils questions in relation to teachers' questions will be noted in this study. Pupil to pupil questioning and interaction will be observed as well.

Summary

In discussing suggestions for what the classroom situation ought to be in relation to teachers' oral questions, the investigator stressed the necessity of teacher awareness to the relationships between psychological theory and the strategies of questioning. The importance of preplanning for questioning, consideration for individual differences, and precision and clarity of the teachers' questions themselves were also mentioned. Investigators state that teachers must be educated to use questions as diagnostic and instructional devices. Studies by Taba (1964) and Flanders (1967) proved that teacher education in questioning strategies was an aid in improving pupils' level of thought. Differentiating questioning strategies for different student thought levels and for different types of student reading materials was also mentioned.

III. CHAPTER SUMMARY

This chapter, a review of related literature, has discussed research findings and professional opinion of the existing classroom situation in relation to teachers' oral questions, and researchers' and professional suggestions for improving the existing classroom situation in relation to teachers' oral questions.

Research seems to indicate that at present teachers appear to be unaware of the complexity that could be involved in teachers' oral questions. Teacher awareness of this complexity could raise the level of thought in the classroom and incorporate many facets of student thinking.

Studies reveal that teachers tend to dominate classroom verbal interaction, to manipulate pupil thought, and to assume the authority of the textbook. Teachers' oral questions seem predominantly to demand answers at the direct recall or literal level of comprehension. A lack of planning for questions and resultant question ambiguity was also cited. Researchers state that teachers tend to ignore individual differences.

A review of the literature in which researchers and professionals in reading and education made recommendations for the improvement of questioning strategies by teachers stressed the prime necessity of teacher awareness to the theoretical background discussed in chapter two and to

questioning strategies. These strategies demand pre-planning for effective questioning, consideration of individual differences, and precision and clarity in teachers' oral questions. Questioning for different purposes and for different types of reading materials also demand training. Researchers suggest teacher education for teacher awareness. This was successful in studies by Taba (1964) and Flanders (1967).

From Taba's and Flanders' studies it can be concluded that teachers' questions as motivators of thinking in reading is a realistic goal of teacher education. The demands of our achievement oriented society require more thinking citizens. No longer can a student commit to memory all that he needs to know. Teachers should no longer look upon him as a vessel to be filled. The student is a lamp to be lit and reading teachers are the *torch bearers*.

The teacher who is a skilled designer of classroom questions and problems is the teacher who helps young minds to grow (Aschner, 1961, p. 46).

CHAPTER IV

THE PLAN OF THE STUDY

This chapter is divided into four sections that discuss the plan of the study. Section one is a description of the sample of teachers' questions and the subsamples within this sample. A brief description of the teachers and their students is also given. The second section describes the instruments used and gives details regarding their suitability for the study. In section three collection of data within selected classrooms is described. An explanation of the method of analysis including a description of question categories chosen, and the statistical device employed, is explained in section four. A chapter summary concludes the chapter.

I. DESCRIPTION OF THE SAMPLE OF TEACHERS'

QUESTIONS

The Sample of Questions

The sample of this study is teachers' oral questions asked of children during the grade five reading lessons observed and taped during the collection of data. The sample of 500 questions chosen from a population of 1,403 teachers' oral questions contains four subsamples of 125 questions each. Each subsample was chosen by random selection from the typed transcription of five recordings

of teacher-pupil reading lesson interaction in each of the following categories:

- (1) Superior reading achievement students and teacher discussing primarily narrative reading material.
- (2) Superior reading achievement students and teacher discussing primarily expository reading material.
- (3) Low-average reading achievement students and teacher discussing primarily narrative reading material.
- (4) Low-average reading achievement students and teacher discussing primarily expository reading material.

Randomization of selection to be read by each group, order of taping, and selection of the sample of teachers' oral questions were accomplished by using a table of random numbers. This was done to avoid the possibility of a selection lending itself to a specific type of question or group and to give equal opportunity for each question asked by the teachers to be chosen for analysis in the study. A question has been defined as an interrogative or declarative expression calling for a verbal reaction in relation to the expression. It was found that inverted word order or rising voice inflection at the end of incomplete or complete statements were most frequently

used as questions by the teachers. Student familiarity with the teachers' patterns of questioning was evident by their rapid responses to incomplete statement questions and their recognition of declarative statements as questions.

A questionnaire prepared by the investigator was completed by each teacher giving details regarding student group placement and teacher education and experience.

Teachers specified that student group placement was made on the following basis: (bracketed figures indicate the number of teacher responses to this placement. Teachers responded to more than one item).

| | | | |
|--|-----|--|-----|
| past achievement of student | (3) | standardized reading tests | (1) |
| individual teacher diagnosis of student | (3) | academic per- formance in grade five | (5) |
| <u>Performance on Science Research Associates</u> <u>Reading Laboratory IIb</u> | | | (1) |

Student placement in reading groups varied since two teachers did not usually group students but read with the class as a whole, two teachers usually had three reading groups within their classrooms, and one teacher usually had two reading groups.

The Students

Table I presents information relating to the students who participated in the study. Children in the study ranged in age from nine years ten months to fourteen years. Older

TABLE I
THE STUDENTS

| Teacher | Number of Students In: | | IQ Range of Students In: | | Chronological Age of Students In: | |
|---------|---------------------------|------------------------|---------------------------|------------------------|-----------------------------------|------------------------|
| | Low-Average Reading Group | Superior Reading Group | Low-Average Reading Group | Superior Reading Group | Low-Average Reading Group | Superior Reading Group |
| ONE | 13 | 12 | 100-117 | 100-126 | 10 yr.-11 yr. | 10 yr. |
| TWO | 9 | 13 | below 66* - 103 | 103-124 | 11 yr.-14 yr. | 10 yr.-10 yr. 6 mos. |
| THREE | 6 | 15 | 80 - 104 | 102-121 | 9 yr.-13 yr. | 9 yr. - 10 yr. |
| FOUR | 6 | 6 | 89 - 98 | 109-125 | 10 yr.-11 yr. | 10 yr.-11 yr. |
| FIVE | 11 | 14 | 101-119 | 104-127 | 10 yr.-12 yr. | 10 yr.-11 yr. |

* -- One student only this low.

students tended to be in the low-average reading groups. The IQ range for students based on various intelligence tests as cited in the students' cumulative records was from below 66 to 127. Students with lower IQ tended to be in low-average reading groups. Teachers one and five, however, seemed to have more homogeneous classes in relation to IQ. Student grouping was on the basis of what was in the teacher's opinion better or lower student reading achievement. Since teachers one and five could have had an opportunity to question at a high level of thinking difficulty with both of their student reading groups, randomization of question selection for the sample should help to overcome the effect of this in the analysis of data.

Reading groups varied in size from six students to fifteen students. Low-average reading groups tended to be smaller in size, especially with teacher three. This should have given an opportunity for a greater degree of teacher questioning flexibility. Analysis of data indicates that such is not the case.

The Teachers

Table II presents information relating to the teachers who participated in the study.

Only one teacher participating in the study had any reading courses beyond the reading and language curriculum

TABLE II
THE TEACHERS

| Teacher | Years of Teacher Education | Certificate Held | Years of Experience | Years of Experience in Grade Five | Number of Reading Courses and Year Taken | Has Attended Recent Seminars on Reading |
|---------|----------------------------------|---------------------|------------------------|--|---|--|
| ONE | 3 | Standard E | more than 10 | 5 | 0 | yes |
| TWO | 1 | Junior E | 8 | 7 | 0 | yes |
| THREE | 1 | Junior E | 10 | 3 | 1 (1960) | yes |
| FOUR | more than 4 | 2nd class | more than 10 | more than 10 | 0 | yes |
| FIVE | more than 4 | B. Ed. | 8 | 2 | 0 | no |

and instruction course taken in normal school. Teacher education ranged from one year to more than four years. Years of experience ranged from eight years to more than ten years. Years of experience in grade five ranged from two years to more than ten years. All but one teacher indicated that they had attended recent inservice seminars or convention meetings that related to reading instruction. The reading teachers chosen for this study were chosen by random selection from the grade five teachers of reading in the Edson School Division. Five female teachers were chosen. This seems justifiable since selection was random and since of the seventeen teachers of grade five reading in the school division all but three were female.

II. INSTRUMENTATION

Since the purpose of this study was to investigate frequencies and proportions in types of teachers' oral questions asked in teacher-class discussion of different types of reading material and for different achievement groups, instruments were chosen to suit this purpose. Two primarily narrative reading selections and two primarily expository reading selections of comparable length and readability were chosen from Reading Comprehension, Understand and Enjoy What You Read by Adrian Sanford et al of the Collier-Macmillan Reading Spectrum Series (1964, pp. 44-47, 64-65, 84-87, 116-117). This was an attempt to

provide each teacher with reading material other than the narrative story fiction that predominates the basal readers.

Readability of selections chosen was determined using the Dale-Chall Readability Formula as explained by Chall (1958). The formula was chosen because it was regarded by Klare (1963) as the consistently more accurate and more predictive formula for reliable readability.

To determine readability the Dale-Chall Readability Formula utilizes a vocabulary count outside the Dale List of 3000 Words and average sentence length. Modification of vocabulary using the Dale List of 3000 Words was employed by bringing each selection within a comparable readability score. Synonyms from the Dale List of 3000 Words were used to replace words in the context that were not on the list. Where suitable synonyms could not be found or where a synonym would detract from the fluency of meaning of the selection, the words were left as they were in the original selection. For example, words such as a *rod* and *reel* were not on the Dale List of 3000 Words but since synonyms would detract from the meaning of the selection the original words were left. Approximately 6 per cent of the total words within narrative reading selections and approximately 10 per cent of the total words in the expository reading selections were not on the Dale List of 3000 Words. About one-third of these in the narrative

reading selections and about one-half in the expository reading selections were replaced by synonyms. So that of the words not on the Dale List of 3000 Words approximately two-thirds were retained in the narrative reading selection and approximately one-half were retained in the expository reading selections. A polysyllabic word such as *perspiration* was left in since the fluency of the selection would have been altered by changing this to the less acceptable word, *sweat*. Personal and place names were not changed since no such names appear on the Dale List of 3000 Words. The range of difficulty among the modified selections as determined by the Dale-Chall Readability Formula varied by only two achievement months; from grade 5.0 to grade 5.2. A limited range of readability was essential since selections were randomly assigned to participating reading groups, superior and low-average reading achievement students in grade five. Since taping and observation took place in April, which is the eighth month of the school term, it was considered that six to eight months below grade level was a defensible level of readability suitable for low average readers. Sentence length within selections was not altered as it was comparable within the selection types used.

Narrative and expository reading selections chosen contrast in several ways. Brown and Olmstad (1962) point out

expository language is less wordy than narrative; this was true of the selections chosen for this study. The average length of expository reading selections was 548 words as compared to an average of 726 words in the narrative reading selections. Simple sentences were the principal sentence group in both types of reading selection. Fifty-eight per cent of all sentences in narrative reading selections were simple while 47 per cent of all sentences in the expository reading selections were simple. Most sentences that were not simple were complex with adverbial subordinate clauses. This amounted to approximately one-half of the remaining sentences in the narrative reading selections and approximately three-fourths of the remaining sentences in the expository reading selections.

The sentences in expository and narrative reading selections varied in average sentence length. Sentences averaged 15.0 words within the expository reading selections as compared to an average sentence length of 10.9 words within the narrative reading selections. Average sentence length with narrative reading selections seemed to be influenced by the presence of dialogue which tended to have shorter sentences. Sentence type and length tended to increase the complexity of the expository reading selections even though readability calculated by the Dale-Chall Readability Formula varied by only two reading achievement

level months.

Contrasts between the types of reading materials were offered to investigate teacher sensitivity to the difference between the language of print according to the author's style and purpose and the children's language as cited by Harrell (1957) in his study of the development of oral and written language of children from nine to fifteen years. If teachers are aware of this difference, their question phrasing should vary accordingly.

Niles (1965) points out that all good writing has some kind of organization and even though a given selection may have many possible variations one special kind of organization usually predominates. She stated that in narrative writing special kinds of time order are most prevalent. This is true in the narrative reading selections chosen for this study. The expository reading selections varied in structure to allow teachers a range of flexibility within which to form conceptual frameworks for each reading selection. One expository reading selection contained a cause-effect structure and the other a compare-contrast structure. This was done since it is the teacher's conception of the reading selection along with her conception of the students' reading achievement level that should primarily determine her questioning techniques.

Style of writing is an important feature in the organization of the selections chosen. Enkvist (1964)

mentions the importance of the affective values of the features of organized language and the reciprocal action of the expressive features. He asserts that it is easier to see style through language structure than through meaning. The affective aspects of style were present in each selection chosen. It is brought out by the use of dialogue in the narrative reading selections and by the conversational tone created through the use of the second person in the expository reading selections. Enkvist also points out that many literary effects are based on shifts in style. This is especially true in the narrative reading selections chosen for this study; each changes tone for effect. In one selection, "The Art Contest," the tone changes from serious to humorous then to serious again. The tone of the other narrative selection, "A Birthday on the Plains," changes from wonder to sorrow to happiness.

Narrative reading selections included:

- (1) "The Art Contest," a humorous account of a contest in which a small girl's picture entered as a joke wins top honors in modern art.
- (2) "A Birthday on the Plains," a story of how a brother brings happiness to his sister and at the same time find a new home for a lost doll.

Children written about in both narrative reading selections are at an appropriate age to interest grade five students, that is, near their own age.

Expository reading selections included:

- (1) "Outwitting the Arctic," an explanation of how airmen are taught to survive Arctic cold.
- (2) "Crab and Surf Fishing," an explanation of how these sports contrast and how each is carried out.

Reading passages were assigned to each group by random selection, as was the order of their presentation. Each participating group in the grade five classroom being observed read one reading selection of each type, narrative and exposition. Subject matter of the selections varied greatly to prevent teacher and/or pupil sophistication between reading groups that might influence teacher questioning behavior.

III. COLLECTION OF THE DATA

Data were collected from five grade five classrooms randomly selected from within a large Alberta rural school division, the Edson School Division. Collections included observation and tape recording during class discussion of the selections read.

During the month of April 1968 each of the five teachers and her superior and low-average reading achievement student groups were observed during discussion of the reading selections assigned and read. Teachers were given the selections one or two days (depending on order of the

taping) in advance of the first taping and observation. Instructions were given to teach the selection as they would ordinarily and teachers were told that discussion following the reading would be taped. The discussion was tape recorded using a standard two-track tape recorder, four microphones and a mixer box. A mixer box is a device that allows the use of up to six microphones with one tape recorder. Microphones are plugged into the mixer box which consolidates the pickup. The four microphones used in the study were placed one at each side and one at each end of a table. A circular seating arrangement allowed for recording equipment to be placed on the table in the centre of the group. Interaction pickup was good. During the taping interaction was observed by the investigator who noted behavior and paralinguistic communications. Discussion did not seem to be unduly hindered by the uniqueness of the situation. Each teacher was observed in teacher-class discussion four times, twice with each achievement group, superior and low-average, so that each group was observed discussing one primarily narrative reading selection and one primarily expository reading selection.

IV. METHOD OF ANALYSIS OF DATA

Taped data were transcribed and typed transcriptions were analyzed in the following way. First the complete

classroom verbal interaction was transcribed from the tapes. From further analysis of the tapes the written transcription was marked for voice inflection, tone, pauses, dialect, and interruptions. An overview of the total transcription and tapes was taken to compare them to the notes taken by the investigator during observations of the reading lessons being tape recorded.

The written transcription was then grouped into four sections. These sections were: the interaction from the discussion of exposition with each of the superior and the low-average reading achievement student groups, and the interaction from the discussion of narration with each of the superior and the low-average reading achievement student groups. Teachers' oral questions in each of the four sections were assigned randomly selected numbers, after which a subsample of 125 teachers' oral questions were randomly selected by number from each section of the transcription to form a sample of 500 teachers' oral questions. These questions were categorized within the context of the transcription into the following categories: procedural questions, affective questions, creative thinking questions, reasoning questions, judgment questions, and memory questions.

The categorized questions were then abstracted from the context of the written transcription and placed on charts. They were grouped into categories. The procedural

and affective questions were put into a procedural-affective category and the creative thinking, reasoning, and judgment questions were combined to form a category of questions requiring analysis and evaluation in addition to direct recall, that is, DR+ questions. A category requiring direct-recall responses, that is, DR questions, received the memory questions. This categorization is seen in Table III.

TABLE III
CATEGORIZATION OF TEACHERS' QUESTIONS
(N=500)

| Question Type (Individual Categories) | Categories into Which Questions Were Placed (Combined Categories) | Number of Questions in Categories |
|---|---|--|
| 1. Procedural | Procedural and Affective (P-A) | 164 |
| 2. Affective | Procedural and Affective (P-A) | |
| 3. Creative Thinking | Direct Recall plus analysis and evaluation (DR+) | 336 |
| 4. Reasoning | Direct Recall plus analysis and evaluation (DR+) | |
| 5. Judgment | Direct Recall plus analysis and evaluation (DR+) | |
| 6. Memory | Direct Recall (DR) | |

If the classification of the question was uncertain, the student response was examined to assist the identification. For example, questions calling for definitions were classed as memory questions unless the response was indicative of reasoning out the answer.

Each question subsample was classified into these question categories (Adapted from Aschner, 1961, pp. 44-46).

(1) Memory Questions:

Those questions requiring a direct-recall response were classified as memory questions.

e.g. "Who is the boy in the story?"

(2) Reasoning Questions:

Those questions calling for an explanation of what is read were classified as reasoning questions. The response depends upon literal comprehension plus some analysis.

e.g. "And why do they make it a point to take their shoes and their clothing in with them, into the sleeping bag?"

(3) Judgment Questions:

These are questions of evaluation. They call for a "cognitive leap" beyond the literal meaning; answers call for a weighing of alternatives.

e.g. "Can you give me reasons why you think that life then was more fun, other than that you didn't have to go to school?"

(4) Creative Thinking Questions:

When reading skills reach a mature level, the reader can use them as tools to gain new vicarious experience. The level of thought involved in these questions calls for the pupil to rely on his own resources.

e.g. "How do you think she might have got there?"

(5) Procedural Questions:

These questions relate to classroom procedure.

e.g. "How about you, Gail?"

(6) Affect Questions:

These are questions to which no answer is necessarily expected. They are used to maintain a pleasant classroom environment.

e.g. "It's just like when we have fire drill, isn't it?"

Categories (5) and (6) were not used in the analysis of teachers' oral questions to determine acceptance or rejection of the null hypotheses because they do not relate to comprehension in the reading process as defined in this study.

The total sample of teachers' oral questions were grouped together to determine if total incidence of memory questions (hereafter called direct-recall, DR, questions) was significantly greater or less than total incidence of reasoning, judgment, and creative thinking questions combined (hereafter called direct-recall plus analysis and evaluation, DR+, questions).

Further comparisons were made:

(1) Between subsamples from the context of teacher-class discussion of narration as against subsamples from the context of teacher-class discussion of exposition to determine if the total incidence of teachers' oral DR questions was significantly greater or less than the total incidence of DR+ questions in one context as against the other.

(2) By regrouping the subsample to teacher questions asked in teacher-class discussion with each student reading achievement level group, a comparison was made to determine if total incidence of teachers' oral DR questions was significantly greater or less than total incidence of teachers' oral DR+ questions when the student reading achievement level changed.

(3) In discussion with each student reading achievement group comparisons were made to determine if the incidence of teachers' oral DR questions was significantly greater or less than incidence of teachers' oral DR+ questions

in one type of reading material as against the other.

Comparisons of question frequencies were made using chi-square (G. Milton Smith, 1964; Ferguson, 1959; and Guilford, 1965). The basic mathematical definition of chi-square (X^2) used for testing hypothesis one is: the ratio of the square of difference between the frequency observed (f_o) and the frequency expected (f_e) to the frequency expected (Guilford, 1965, p. 229). That is the chi-square for testing a null hypothesis for two frequencies in alternate categories, for example,

$$X^2 = \frac{2 (f_o - f_e)^2}{f_e} .$$

This formula was used to test null hypothesis one for significance. In testing null hypothesis one frequency expected was taken as the mean of observed categories.

Null hypotheses two through five were tested for significance using chi-square as a contingency table which studies the independence or association of two variables. Data were comprised of paired observations on two nominal variables, that is, DR and DR+ questions within two student reading achievement levels, and DR and DR+ questions within two different types of reading material.

The contingency tables were comprised of two rows and two columns and are referred to as 2 x 2 or fourfold tables. The number of degrees of freedom is $(r-1) (c-1)$ or $(2-1)$

$(2-1) = 1$, (r = rows and c = columns). Given the restrictions of the marginal totals, if one cell value is known the remaining three values can be determined (see Figure 2 and Figure 3 below). For this type of table a test for independence can be readily obtained without calculating expected values (Ferguson, 1959).

| Type of Reading Material | CATEGORIES OF QUESTIONS | | Total Number of Questions |
|--------------------------------|-------------------------|-------|---------------------------------|
| | DR | DR+ | |
| EXPOSITION | A | B | A + B |
| NARRATIVE | C | D | C + D |
| Total Number of Questions | A + C | B + D | |

FIGURE 2

CHI-SQUARE CONTINGENCY TABLE USED TO TEST NULL HYPOTHESES TWO, FOUR, AND FIVE FOR SIGNIFICANCE

Letters represent the question frequencies in each category. $N = A + B + C + D$, i.e. the total number of questions in the sample or subsample being tested.

| Student Reading Achievement Level | CATEGORIES OF QUESTIONS | | Total Number of Questions |
|--|-------------------------|-------|---------------------------------|
| | DR | DR+ | |
| SUPERIOR | A | B | A + B |
| LOW-AVERAGE | C | D | C + D |
| Total Number of Questions | A + C | B + D | |

FIGURE 3

CHI-SQUARE CONTINGENCY TABLE USED TO TEST NULL
HYPOTHESIS THREE FOR SIGNIFICANCE

Letters represent the question frequencies in each category. $N = A + B + C + D$, i.e. the total number of questions in the subsample being tested.

Chi-square was then calculated by the formula:

$$X^2 = \frac{N(AD - BC)^2}{(A+B)(C+D)(A+C)(B+D)}$$

V. SUMMARY

Five reading teachers and their reading classes were randomly selected from within the Edson School Division. Teachers prepared to teach previously assigned reading selections to what they considered to be their superior group and low-average group within their reading class. Reading selections assigned were one primarily narrative reading selection and one primarily expository reading selection for each student group. During the

discussion of each selection read teacher-class verbal interaction was observed and tape recorded.

Tapes were transcribed and from the typed protocol a sample of 500 teachers' oral questions were randomly selected. The sample included four subsamples of 125 teachers' oral questions from each of the following contexts: superior reading achievement student groups discussing primarily narrative reading selections, superior reading achievement student groups discussing primarily expository reading selections, low-average reading achievement student groups discussing primarily expository reading selections, and low-average reading achievement student groups discussing primarily narrative reading selections.

Sample questions were classified into categories adapted from Aschner (1961). Categories included memory questions, reasoning questions, judgment questions, creative thinking questions, procedural questions, and affective questions. The latter two categories were not included in significance tests as they did not relate to reading comprehension as defined in this study.

Tests of significance were made using chi-square to determine acceptance or rejection of the null hypotheses.

CHAPTER V

THE FINDINGS OF THE STUDY

This chapter will present the results of the analysis of 336 questions from the sample of 500 teachers' oral questions randomly chosen from the type-written transcription of the tape recorded interaction which identified 1,403 teachers' questions.

From observations of the total testing situation noted during taping of reading lessons and from the analysis of these tapes, general tendencies in teachers' questioning behavior will be discussed. Individual traits in teachers' questioning behavior noted as different from the general behavior pattern within the sample of teachers observed during the taping of reading lessons will be identified. Students' verbal interaction will also be cited.

The findings, from the analysis of data which included a chi-square test of significance for each null hypothesis in the study, will be reported. Frequencies of teachers' oral questions in each question category and proportions of questions indicated by percentages of the whole question sample will also be offered. A summary will conclude the chapter.

I. AN OVERALL VIEW OF TEACHER-CLASS DISCUSSION DURING READING LESSONS

An overall view of teacher-class discussion during the tape recording of reading lessons was determined from observations made by the investigator during the taping and from the analysis of the tapes made. Teacher traits prevalent in the questioning-behavior among the five teachers in the study will be described as their general tendencies. Those teacher traits that are unique to an individual teacher or two teachers will be recounted as their individual traits. Pupils' responding and questioning-behavior will be reported as pupils' verbal behavior.

General Tendencies in Teachers' Questioning-Behavior

During observation and taping of the teachers selected for the study and from the analysis of transcriptions and tapes, the investigator noted several teacher questioning-behavior tendencies to be prevalent throughout the sample.

Some of these tendencies frequently seemed to place restrictions upon pupils' thought and appeared to be illustrative of the teachers' attempts to do the pupils' thinking for them. Examples of this follow.

Teachers tended to ask a series of questions that led to the rejection of alternative answers by the students

before the response acceptable to the teacher was requested by her. This usually limited the response to one correct answer that the teacher had in mind. Frequently teachers enlarged upon a student's response to make the meaning clear rather than requiring the students to clarify or enlarge their own responses or those of other students. At times teachers answered their own questions without requesting answers from the students. This was also the case when students' responses did not seem to meet the teachers' expectations. For questions requiring alternative responses, such as judgment questions, teachers often interrupted students whose responses were different from what the teacher apparently had in mind. The interruption was usually another question or a clarifying statement, as shown in the questions, "What does it say there?" or "And they just come up to shore, right? And then they recede back." This tendency of teachers to attempt to do the students' thinking for them by leading them through alternative answers could also be discerned from the number of short answer or incomplete sentence type questions. Questions that were incomplete sentences with a rising inflection on the last word limit responses almost completely to one word responses, for example, "These people were going to ...?" Such questions are similar to fill in the blanks in written exercises in student workbooks.

The above tendencies could also be indicative of an overdependence on the literal meaning of the selection read. Other traits that seemed to denote this overdependence include the tendency to have pupils read the answer from the text of the selection read even to the point of locating the correct paragraph for the pupil. The literal meaning of the text was never disputed by the teacher in a call for alternative interpretations.

The teacher's voice inflection and wording appeared frequently to denote expected pupil responses or acceptability of the response received. This was particularly true of yes-no questions and opinion questions as in, "Do you think the author *really* likes modern art?" The teacher's voice inflection on *really* indicated that *no* was the acceptable response. Another way that teachers denoted the expected response was to ask questions containing alternative answers within the question. In such questions the last of the alternatives given was usually the expected response. An example of this is, "Would you feel very happy or would you feel kinda scared or would you feel panicky or how would you feel?"

Good listening habits did not seem to be encouraged by the question strategies employed. Teachers frequently repeat their own and pupils' questions as well as pupils' responses. Questions calling for unison answers were common, for example, "Did you like the story?"

Teachers' questions were at times apparently ambiguous. If responses or a lack of responses indicated that meaning was not clear, teachers rephrased their original question. But teachers seemed to be willing to accept ambiguous, incorrect, or hesitant answers. Ambiguous answers appeared to indicate student uncertainty. For example, to the teacher's question "Where in the United States is Utah?", the pupil's response, "It's at the top." was accepted. The investigator observed several incidences where incorrect answers were accepted as correct by teachers. This was particularly true in teacher-class discussions of expository reading material.

Other traits were noticeable in teachers' questioning behavior. One commendable tendency was the teachers' posing of global questions. These were questions asked of the total student group before singling out a specific student to answer. Time for the students to think about their answer was not always given, however. Another laudable trait was the frequent asking of a series of questions about a specific point or section of the selection read. This was most noticeable in discussion of narration. As students responded to the teacher's questions, the teacher formulated new questions in relation to the pupils' responses. Thus a sequence of questions brought out the meaning in that section of the discussion. Experiential questions were frequently tied to the vicarious experience provided by the

reading material. For example, all of the teachers referred to the pupils' own experience with fishing in relation to the fishing mentioned in the expository reading selection, "Crab and Surf Fishing."

Individual Traits in Teachers' Questioning Behavior

Although teacher questioning behavior tended to follow a fairly consistent general pattern, some individual differences appeared noteworthy to the investigator.

Paralinguistic devices used by teachers seemed to be highly individualistic. One teacher motioned with her hand to the pupil from whom she wished to receive a response. Another teacher nodded to the pupil from whom she wished to receive a response. She inclined her head and raised her eyebrows to encourage a child having difficulty.

Poor discipline seemed restrictive to the number and quality of questions one teacher was able to ask. It also appeared to be prohibitive of good quality responses by the students. For another teacher poor discipline did not appear to restrict her but it did seem to prohibit quieter students from participation in the discussion.

One teacher had the students question her about the selection read before she made any comments about the selection. Although the teacher was the intermediary in the discussion, other students were frequently called

upon to answer the questions of their classmates. The students responded well without self consciousness indicating that this was a familiar interaction pattern.

Two of the teachers often allowed the students to express themselves freely giving reasons for their answers at length and explaining the answers to experiential questions.

Students' Verbal Behavior

Students' verbal behavior was principally responses to teacher initiated interaction. Throughout the discussion of the reading selections assigned, no direct inter-pupil verbal interaction was noted. All interaction was teacher to pupil or pupil to teacher. Any pupil to pupil opinion used the teacher as an intermediary. Frequently more vocal children were allowed to dominate the discussion by interrupting more unsure students or by shouting out the answers to the teacher's questions.

Most student responses to teachers' questions were short answer responses. In the case of DR questions one word answers were common. Pupils' responses were often interrupted by the teacher when these responses did not appear to be congruent with the response that the teacher had in mind. Two teachers allowed for frequent expanded responses by their students. In discussion with the superior reading achievement student groups especially,

these expanded responses were indicative of good quality reasoning by the students.

Examples of students initiating verbal behavior were limited in number. Students asked 114 oral questions as compared to 1,403 oral questions asked by the teachers. This gives a proportion of teachers' oral questions to pupils' oral questions of approximately 12:1. The proportion would have been much higher except for one teacher who encouraged students to question. The proportion of teacher's oral questions to students' oral questions in her reading lessons was 2.6:1, and the proportion of teachers' oral questions to students' oral questions in the other four teachers' reading lessons was approximately 61:1. Noteworthy is the fact that 95 of the 114 students' questions asked were asked by the reading classes of this one teacher. The nineteen questions asked by students in the other four teachers reading classes were mainly procedural such as, "Where are we?"

In the 95 students' questions asked in the reading lessons of the one teacher who encouraged student questioning, a difference in question quality was evident between the low-average reading achievement student group and the superior reading achievement student group. Superior reading achievement students asked more insightful and relevant questions. For example, low-average reading achievement students' questions included "Did the crabs

know they were going to get caught?" "Does variety mean small?" while superior reading achievement students' revealed their insights and curiosity with questions such as, "How do they get the igloos so the roof will stay up?" and "How come they were stationing those men out there?" The expression *how come* frequently replaced *why* and was probably dialectical as two of the teachers used the expression as frequently as the students.

Other student verbal traits varied by classroom.

III. TESTING THE HYPOTHESES AND INTERPRETATIONS

Chi-square contingency tables used for testing the significance of each null hypothesis were based on the explanation offered in chapter four. Tables illustrate distribution of questions within the total question sample used for each null hypothesis. Percentages are used to represent proportions for each question category.

A preliminary summary table (Table IV) sets out the findings in each question category as well as the findings in the combined categories outlined in Table III. Table IV gives the percentages of teachers' oral questions: for all question categories, for changes occurring when the type of reading material being discussed changes, for changes when the student reading achievement level changes, and for each student reading achievement level when the type of reading material being discussed changes.

TABLE IV

A PRELIMINARY STATEMENT OF FINDINGS: PERCENTAGES OF TEACHERS' ORAL QUESTIONS
FOR INDIVIDUAL QUESTION CATEGORIES AND FOR COMBINED QUESTION CATEGORIES

| Question Category | Percentage of Teachers' Oral Questions: | | | | | | | | |
|----------------------------------|---|---|--|--|---|------|------|------|------|
| | For All Question Categories | When Type of Reading Material Being Discussed Changed | When Student Reading Achievement Level Changes | When Type of Reading Material Being Discussed with Superior Reading Achievement Students Changes | When Type of Reading Material Being Discussed with Low-Average Reading Achievement Students Changes | Nar. | Exp. | Nar. | Exp. |
| Procedural | 29.2 | Nar. 30.0 Exp. 28.4 | Sup. 30.4 Low-Av. 28.0 | Nar. 30.4 Exp. 30.4 | Nar. 29.6 Exp. 26.4 | | | | |
| Affective | 3.6 | Nar. 1.2 Exp. 6.0 | Sup. 3.2 Low-Av. 4.0 | Nar. 1.6 Exp. 4.8 | Nar. 0.8 Exp. 7.2 | | | | |
| P-A (combined question category) | 32.8 | Nar. 31.2 Exp. 34.4 | Sup. 33.6 Low-Av. 32.0 | Nar. 32.0 Exp. 35.2 | Nar. 30.4 Exp. 33.6 | | | | |
| Creative Thinking | 0.4 | Nar. 0.4 Exp. 0.4 | Sup. 0.4 Low-Av. 0.4 | Nar. 0.0 Exp. 0.8 | Nar. 0.8 Exp. 0.0 | | | | |
| Reasoning | 10.4 | Nar. 12.4 Exp. 8.4 | Sup. 10.0 Low-Av. 10.8 | Nar. 10.4 Exp. 9.6 | Nar. 14.4 Exp. 7.2 | | | | |
| Judgment | 14.8 | Nar. 21.2 Exp. 8.4 | Sup. 17.2 Low-Av. 12.4 | Nar. 28.8 Exp. 5.6 | Nar. 13.6 Exp. 11.2 | | | | |
| DR+ (combined question category) | 25.6 | Nar. 34.0 Exp. 17.2 | Sup. 27.6 Low-Av. 23.6 | Nar. 39.2 Exp. 16.0 | Nar. 27.8 Exp. 18.4 | | | | |
| Memory | 41.6 | Nar. 34.8 Exp. 48.4 | Sup. 38.8 Low-Av. 44.4 | Nar. 28.8 Exp. 48.8 | Nar. 40.8 Exp. 48.0 | | | | |
| DR | 41.6 | Nar. 34.8 Exp. 48.4 | Sup. 38.8 Low-Av. 44.4 | Nar. 28.8 Exp. 48.8 | Nar. 40.8 Exp. 48.0 | | | | |

Hypothesis One

There is no significant difference between the frequency of teachers' oral questions requiring direct-recall responses and those requiring analysis and evaluation in addition to direct recall.

From Table V it can be determined that there was a significantly greater frequency of teachers' oral DR questions than DR+ questions. Data used were from the total question sample and did not differentiate for student reading achievement level or for the type of reading material being discussed. The total of 336 is the number of questions remaining after procedural and affective questions were removed from the sample.

TABLE V

A COMPARISON OF THE FREQUENCY OF TEACHERS' ORAL DR QUESTIONS TO DR+ QUESTIONS

| fo | | | fe | | df | χ^2 | prob. |
|--------------------|-----|-----|------|-----|-----|----------|-----------|
| Question Category | DR | DR+ | Both | DR | DR+ | | |
| Question Frequency | 208 | 128 | 336 | 168 | 168 | 1 | 38.1 .001 |

where: $\chi^2 = \frac{2(fo-fe)}{fe}$

fo = frequency observed

fe = frequency expected

Null hypothesis one is rejected at greater than the .001 level of probability. There is a significant difference between the frequency of teachers' oral questions requiring direct-recall responses and those requiring analysis and evaluation in addition to direct recall.

In relation to this study the high frequency of teachers' oral DR questions indicated that students are called on most frequently to give direct memory responses when teacher-class discussion is analyzed without differentiation for the type of reading material or student reading achievement level. The question frequencies cited in Table V are indicative of the teachers' dependence upon the literal meaning of the printed page.

Table VI gives a percentage breakdown of total question categories. It can be noted that a combined procedural and affective question category equaled approximately one-third of all questions asked. Teachers' oral DR questions can be seen as being the category which has significantly greater frequency of questions asked by teachers within this study.

Table VI indicates that teachers asked fewer DR+ questions than either DR questions or procedural and affective questions as a combined category. In the present study this is indicative that teachers' questioning behavior lacks the desirable variety to demand different

TABLE VI

THE FREQUENCIES AND PERCENTAGES OF QUESTIONS IN
EACH QUESTION CATEGORY FOR THE TOTAL SAMPLE OF
TEACHERS' ORAL QUESTIONS

| Question Category: | | Frequencies for Individual Categories | Percentage for: | |
|----------------------|----------|---|------------------|-------------------|
| Individual | Combined | | Indiv. Categ. | Combin. Categ. |
| Procedural | P-A | 146 | 29.2 | 32.8 |
| Affective | | 18 | 3.6 | |
| Creative Thinking | DR+ | 2 | 0.4 | 25.6 |
| Judgment | | 52 | 10.4 | |
| Reasoning | | 74 | 14.8 | |
| Memory | DR | 208 | 41.6 | 41.6 |
| Total | | 500 | 100.0 | 100.0 |

levels of thinking in students' responses. DR questions usually call for a single congruent response whereas questions in the DR+ category demand a weighing of alternative answers to reach a conclusion. It may not be feasible to expect equal proportions of DR and DR+ questions as indicative of variety in teachers' questioning behavior. But the large discrepancy of 16 per cent difference between these two question categories can be taken as a less than desirable teacher dependence on the use of DR questions.

Hypothesis Two

There is no significant difference in the proportion of teachers' oral questions requiring direct-recall responses to those

requiring analysis and evaluation in addition to direct recall when the type of reading material being discussed changes from exposition to narration.

That the proportion of teachers' oral DR questions to DR+ questions was approximately 3:1 during discussion of expository reading material as compared to approximately 1:1 during discussion of narrative reading material can be seen in Table VII. This accounted for the highly significant difference noted by the chi-square.

TABLE VII

A COMPARISON OF THE PROPORTION OF TEACHERS' ORAL DR QUESTIONS TO DR+ QUESTIONS WHEN THE TYPE OF READING MATERIAL BEING DISCUSSED CHANGES FROM EXPOSITION TO NARRATION

| Question Category | Question Frequency | | Total Question Frequency (N) | χ^2 | prob. |
|-------------------|--------------------|---------|------------------------------|----------|--------|
| | Expos. | Narr. | | | |
| DR | A 121 | C 87 | 336 | 19.2 | .001** |
| DR+ | B 43 | D 85 | | | |

$$\chi^2 = \frac{N(AD-BC)^2}{(A+B)(C+D)(A+C)(B+D)}$$

** = highly significant

Null hypothesis two was rejected at greater than the .001 level of probability. When exposition was discussed, the proportion of teachers' oral DR to DR+ questions was significantly greater than the proportion

of teachers' oral DR to DR+ questions in discussion of narration.

The results of the chi-square contingency table for null hypothesis two indicated that teachers' oral questions tended to call for more variety in students' thinking in discussion of narration than in discussion of exposition. A high degree of teacher dependence on memory as a mode of student thinking was seen by the great number of DR questions used in discussion of exposition where the proportion of DR to DR+ questions as indicated in Table VII was approximately 3:1. This illustrated a strong teacher dependence upon the literal meaning of the text of what is read and suggested teachers in this study may not know either how to relate facts together or how to formulate questions which would lead children to do so. A noteworthy example of this was observed in the teacher-class discussion of the expository reading selection, "Outwitting the Arctic." One portion of the selection described a survival test in which the men were required to sleep outdoors. They were ordered to make a snow block roof for shelter. Each teacher interpreted this section differently. The interpretations seemed indicative of an inability to see the relationship between facts. Only one teacher related the shelter to the shelters mentioned earlier in the story. Otherwise because it was not specifically mentioned in the literal

text, the interpretation of this point in the reading selection by the teacher was quite ambiguous.

Tables VIII and IX offer percentages in question categories used by teachers in class discussion of each type of reading material, narration and exposition.

TABLE VIII

THE FREQUENCY AND PERCENTAGE OF TEACHERS' ORAL
QUESTIONS IN EACH QUESTION CATEGORY AS ASKED
IN DISCUSSION OF NARRATION

| Question Category: | | Frequencies for Individual Categories | Percentages for: | |
|----------------------|----------|---|------------------|-----------------|
| Individual | Combined | | Indiv. Categ. | Comb. Categ. |
| Procedural | P-A | 75 | 30.0 | 31.2 |
| Affective | | 3 | 1.2 | |
| Creative Thinking | DR+ | 1 | 0.4 | 34.0 |
| Reasoning | | 31 | 12.4 | |
| Judgment | | 53 | 21.2 | |
| Memory | DR | 87 | 34.8 | 34.8 |
| Total | | 250 | 100.0 | 100.0 |

TABLE IX

THE FREQUENCY AND PERCENTAGE OF TEACHERS' ORAL
QUESTIONS IN EACH QUESTION CATEGORY AS ASKED
IN DISCUSSION OF EXPOSITION

| Question Category: | | Frequencies for Individual Categories | Percentages for: | |
|----------------------|----------|---|------------------|-----------------|
| Individual | Combined | | Indiv. Categ. | Comb. Categ. |
| Procedural | P-A | 71 | 28.4 | 34.4 |
| Affective | | 15 | 6.0 | |
| Creative Thinking | DR+ | 1 | 0.4 | 17.2 |
| Reasoning | | 21 | 8.4 | |
| Judgment | | 21 | 8.4 | |
| Memory | DR | 121 | 48.4 | 48.4 |
| Total | | 250 | 100.0 | 100.0 |

As in the total sample, it can be noted that a combined category of procedural and affective questions amounted to approximately one-third of all questions asked by the teacher. The percentage of teachers' DR+ questions asked in discussion of narration was twice as great as the percentage of teachers' DR+ questions asked in discussion of exposition. Noteworthy also was the fact that the percentage of judgment questions compared to the percentage of reasoning questions was higher in teacher-class discussion of narration than in teacher-class discussion of exposition. The frequency of affective

questions was greater in discussion of exposition than in the discussion of narration.

The percentage breakdown of question categories as asked by teachers in classroom discussion of each type of reading material illustrated that, generally, questions from categories other than memory questions were asked more frequently when teachers discussed narrative reading material with their classes. When expository reading material was discussed, teachers asked a preponderance of memory questions.

The greater variety in teachers' use of question types was noticeable in the greater frequencies of judgment and reasoning questions and the fewer memory questions asked by teachers in class discussion of narration compared to exposition. Because judgment questions allowed for weighing of alternative answers to choose one answer from several, the greater frequency of judgment questions was indicative of stimulation of more levels of student thinking beyond direct recall. Variety evident in teachers' questioning behavior in teacher-class discussion of narration was probably due to the teachers familiarity with the basal readers and guidebooks. The basal series usually contain a predominance of narration. Teachers' dependency upon the basal guidebook was stressed by one teacher who told the investigator of her difficulty in preparing to teach the reading selections assigned for the

study. She attributed her difficulty to her dependence on the basal readers' guidebook.

But the level of students' thinking beyond memory suggested by teachers' oral question percentages illustrated in Table VIII may be somewhat restricted in reality. Observations by the investigator of teachers' reactions to pupils' responses during the taping of reading lessons and from analysis of these tapes showed that the range of acceptable pupils' responses was limited by what the teacher had in mind as an acceptable response.

Hypothesis Three

There is no significant difference in the proportion of teachers' oral questions requiring direct-recall responses to those requiring analysis and evaluation in addition to direct recall when the student reading achievement level changes from superior to low-average.

Table X illustrates that regardless of student reading achievement level involved in teacher-class discussion, teachers asked more oral DR questions than DR+ questions. It can be noted from Table X that the proportion of teachers' oral DR questions to DR+ questions was higher, though not significantly so, in questions asked to low-average reading achievement level students.

The chi-square contingency table test of significance for null hypothesis three indicated that the null hypothesis was upheld since the level of probability

TABLE X

A COMPARISON OF THE PROPORTION OF TEACHERS' ORAL
DR QUESTIONS TO DR+ QUESTIONS WHEN THE STUDENT
READING ACHIEVEMENT LEVEL CHANGES FROM
SUPERIOR TO LOW-AVERAGE

| Question Category | Question Frequency | | Total Question Frequency (N) | χ^2 | prob. |
|----------------------|--------------------|----------------|---------------------------------------|----------|-----------|
| | Superior | Low Average | | | |
| DR | A 97 | C 111 | 336 | 1.4 | .30 ns |
| DR+ | B 69 | D 59 | | | |

$$\chi^2 = \frac{N(AD-BC)^2}{(A+B)(C+D)(A+C)(B+D)}$$

of .30 is too great to be a random chance. The results indicated that regardless of the reading achievement student group with whom teachers are in discussion during reading lessons, teachers asked more DR than DR+ questions. No change in this pattern occurred when the reading achievement group changed.

As stated earlier it may not be feasible to expect an equal portion of DR and DR+ questions. But a change designed to meet different student reading achievement levels should occur. This should be true because superior reading achievement means good reading comprehension. Superior reading ability usually relates also to good mental ability and development of good comprehension. Researchers in children's thinking (Taba, 1964; Peel, 1960;

Russel, 1956) point out that more immature or slower learners require a broader background of memory thinking before going beyond to other levels of thought such as reasoning and judging. Therefore it would seem that the low-average reading achievement students who often are slower in the development of mental abilities would require more teachers' oral DR questions before going on to DR+ questions than would the superior reading achievement students who also are often better prepared mentally.

Percentages of total question categories within each student reading achievement level, superior and low-average, are offered in Tables XI and XII. It can be noted that approximately one-third of all teachers' oral questions in the sample fell into a combined procedural-affective category. More judgment than reasoning questions were noticeable in discussion with the superior reading achievement student group. A somewhat smaller percentage of teachers' oral DR questions were asked in discussion with the superior reading achievement student group. This could be due to teacher awareness of the ability of the superior reading achievement students to think about alternative answers. Perhaps this awareness was stimulated by teacher reaction to superior reading achievement students' responses to DR+ questions. Teachers tended to cue many of their questions from students' responses to previously asked teachers' questions. The result might be that students'

responses may direct the discussion rather than teacher planning. Teacher planning is necessary to ensure that questioning promotes levels of student thought beyond that of direct recall.

Tables XI and XII show a moderately consistent correspondence of frequencies and percentages throughout question categories. A noticeable deviation in the correspondences could be seen between each reading achievement student group in the teachers' judgment question categories and in memory question categories.

TABLE XI

THE FREQUENCY AND PERCENTAGE OF TEACHERS' ORAL
QUESTIONS IN EACH QUESTION CATEGORY ASKED
IN DISCUSSION WITH SUPERIOR READING
ACHIEVEMENT STUDENT GROUPS

| Question Category: | | Frequencies for Individual Categories | Percentages for: Indiv. Categ. | Comb. Categ. |
|----------------------|----------|---|--------------------------------------|-----------------|
| Individual | Combined | | | |
| Procedural |] P-A | 76 | 30.4 | 33.6 |
| Affective | | 8 | 3.2 | |
| Creative Thinking |] DR+ | 1 | 0.4 | 27.6 |
| Reasoning | | 25 | 10.0 | |
| Judgment | | 43 | 17.2 | |
| Memory | DR | 97 | 38.8 | 38.8 |
| Total | | 250 | 100.0 | 100.0 |

TABLE XII

THE FREQUENCY AND PERCENTAGE OF TEACHERS' ORAL
QUESTIONS IN EACH QUESTION CATEGORY ASKED
IN DISCUSSION WITH LOW-AVERAGE READING
ACHIEVEMENT STUDENT GROUPS

| Question Category: | | Frequencies | Percentages for: | |
|----------------------|----------|------------------------------|------------------|-----------------|
| Individual | Combined | for Individual Categories | Indiv. Categ. | Comb. Categ. |
| Procedural |] P-A | 70 | 28.0 | 32.0 |
| Affective | | 10 | 4.0 | |
| Creative Thinking |] DR+ | 1 | 0.4 | 23.6 |
| Reasoning | | 27 | 10.8 | |
| Judgment | | 31 | 12.4 | |
| Memory | DR | 111 | 44.4 | 44.4 |
| Total | | 250 | 100.0 | 100.0 |

More judgment and fewer memory questions were asked by teachers in discussion with superior reading achievement students than in discussion with low-average reading achievement students. Although this difference is not great enough to be significant and to cause the rejection of the null hypothesis (as seen in Table X), it does illustrate some small degree of change in teachers' questioning behavior in discussion of reading selections with superior reading achievement student groups.

Hypothesis Four

There is no significant difference in the proportion of teachers' oral questions requiring direct-recall responses to those requiring analysis and evaluation in addition to direct recall when the type of reading material being discussed changes from exposition to narration in teacher-class discussion with the superior reading achievement student group.

The type of reading material being discussed with superior reading achievement student groups does significantly alter the proportion of teachers' oral DR questions to DR+ questions. Table XIII illustrates that the proportion of teachers' oral DR questions to DR+ questions was approximately 3:1 during discussion of expository reading material as compared to approximately 0.7:1 during discussion of narrative reading material. Indicated also was the fact that the teachers of the study tended to ask more DR+ questions than DR when discussing narrative reading material with superior reading achievement student groups.

The test of significance for null hypothesis four indicated that the null hypothesis can be rejected at greater than the .001 level of probability. This is a highly significant level.

The findings illustrated that there was a definite change in teachers' questioning behavior with superior reading achievement students when the type of reading material being discussed changed from exposition to narration.

TABLE XIII

A COMPARISON OF THE PROPORTION OF TEACHERS' ORAL DR QUESTIONS TO DR+ QUESTIONS WHEN THE TYPE OF READING MATERIAL BEING DISCUSSED WITH SUPERIOR READING ACHIEVEMENT STUDENTS CHANGES FROM EXPOSITION TO NARRATION

| Question Category | Question Frequency | | Total Question Frequency (N) | X ² | prob. |
|-------------------|--------------------|---------|------------------------------|----------------|--------|
| | Expos. | Narr. | | | |
| DR | A 61 | C 36 | 166 | 20.2 | .001** |
| DR+ | B 20 | D 49 | | | |

$$X^2 = \frac{N(AD-BC)^2}{(A+B)(C+D)(A+C)(B+D)}$$

** = highly significant

It can be observed in Table XIII that teachers in the study asked more DR+ than DR questions of superior reading achievement students in teacher-class discussion of narration. This is the only point in the study where more DR+ than DR questions were asked. This is probably due to teacher familiarity with the predominately narrative reading material of the basal reading series which are used daily for regular reading lessons.

The high proportion of teachers' oral DR questions asked of superior reading achievement students in teacher-class discussion of exposition was the common pattern throughout the study in teacher-class discussion of exposition.

Tables XIV and XV give a percentage breakdown of the individual and combined question categories from teacher-class discussion with the superior reading achievement student group with each of narration and exposition.

TABLE XIV

THE FREQUENCY AND PERCENTAGE OF TEACHERS' ORAL QUESTIONS IN EACH QUESTION CATEGORY WITHIN THE SUBSAMPLE FROM DISCUSSION OF NARRATION WITH THE SUPERIOR READING ACHIEVEMENT STUDENT GROUP

| Question Category: | | Frequencies for Individual Categories | Percentages for: | |
|----------------------|----------|---|------------------|-----------------|
| Individual | Combined | | Indiv. Categ. | Comb. Categ. |
| Procedural |] P-A | 38 | 30.4 | 32.0 |
| Affective | | 2 | 1.6 | |
| Creative Thinking |] DR+ | 0 | 0.0 | 39.2 |
| Reasoning | | 13 | 10.4 | |
| Judgment | | 36 | 28.8 | |
| Memory | DR | 36 | 28.8 | 28.8 |
| Total | | 125 | 100.0 | 100.0 |

TABLE XV

THE FREQUENCY AND PERCENTAGE OF TEACHERS' ORAL
QUESTIONS IN EACH QUESTION CATEGORY WITHIN
THE SUBSAMPLE FROM DISCUSSION OF EXPOSITION
WITH THE SUPERIOR READING ACHIEVEMENT
STUDENT GROUP

| Question Category: | | Frequencies for Individual Categories | Percentages for: | |
|----------------------|----------|---|------------------|-----------------|
| Individual | Combined | | Indiv. Categ. | Comb. Categ. |
| Procedural |] P-A | 38 | 30.4 | 35.2 |
| Affective | | 6 | 4.8 | |
| Creative Thinking |] DR+ | 1 | 0.8 | 16.0 |
| Reasoning | | 12 | 9.6 | |
| Judgment | | 7 | 5.6 | |
| Memory | DR | 61 | 48.8 | 48.8 |
| Total | | 125 | 100.0 | 100.0 |

One-third of the total teachers' questions in each reading material context was procedural and affective as a combined question category. The frequency of affective questions was slightly higher in discussion of expository reading material. In Table XIII a significant difference between the proportion of teachers' oral DR questions to DR+ questions can be seen when the type of reading material changed from exposition to narration. From Table XIV it can be seen that when narrative reading material was discussed with superior reading achievement

groups within this study, the percentage of teachers' oral DR+ questions exceeded the percentage of DR questions by 10.4 per cent. However, the overall finding that the percentage of teachers' oral DR questions was greater than the percentage of DR+ questions is maintained in the discussion of exposition. Here a comparison of the percentage of DR to DR+ questions is slightly greater than 3:1. It was interesting to note that during discussion of narration with superior reading achievement student groups the frequency of teachers' oral memory questions was identical to the frequency of judgment questions. Far fewer judgment questions were asked by teachers in discussion of expository reading material. Greater than five times as many judgment questions were asked by teachers in teacher-class discussion of narration than in discussion of exposition.

Relating Tables XIV and XV to the purpose of this study it can be seen that the reason for the significant difference in the proportion of DR to DR+ questions in discussion of narration was the higher frequency of judgment questions asked by teachers. As many judgment questions as memory questions were asked by teachers in this context. This is indicative of greater variety in teachers' oral question types being asked in teacher-class discussion of narrative reading material with superior reading achievement student groups than in discussion of expository reading material. The high frequency of teachers'

judgment questions in teacher-class discussion of narration related to an abundance of *why* questions and *what do you think* questions. Quality of student thinking demanded by these questions was restricted by the teachers' wording of the questions. In many cases the teachers' wording limited the students' responses to *yes* or *no*, for example, "How many would agree with Terry?"; "Did you like the story?"; "How many think it was more fun today than during Molly's and Bill's time?"

The percentage of DR questions remained high in discussion of exposition. For this reason the percentage of teachers' oral questions in question categories other than DR was low showing a lack of questioning variety in teacher-class discussion of exposition with superior reading achievement student groups. Teachers asked 16.0 per cent DR+ questions as compared to 48.8 per cent DR questions in discussion of exposition. This seems illustrative of teachers' overdependence on the literal meaning of the exposition selections read and a lack of the ability to question the relationships between facts. In teacher-class discussion of narration the percentages were 39.2 per cent DR+ questions compared to 28.8 per cent DR questions. This is a reversal of the teachers' dependence on memory questions and is perhaps due to teachers' security in discussion of narration due to their familiarity with it.

Hypothesis Five

There is no significant difference in the proportion of teachers' oral questions requiring direct-recall responses to those requiring analysis and evaluation in addition to direct recall when the type of reading material being discussed changes from exposition to narration in teacher-class discussion with the low-average reading achievement student group.

Table XVI indicates that the type of reading material being discussed did not significantly alter the proportion of teachers' oral DR questions as compared to DR+ questions in discussion with low-average reading achievement student groups. It can be noted in Table XVI that the proportion of DR to DR+ questions was somewhat higher in discussion of exposition than in discussion of narration. The difference in these proportions was not significantly great to warrant rejection of the null hypothesis.

The null hypothesis can be upheld at the .10 level of probability.

The findings illustrated that teachers did not significantly change their questioning behavior in teacher-class discussion with low-average reading achievement student groups when the type of reading material changed from exposition to narration. In Table XVI it can be seen that teachers asked more DR questions than DR+ questions regardless of the type of reading material being discussed. The proportion of DR questions to DR+ questions

TABLE XVI

A COMPARISON OF THE PROPORTION OF TEACHERS' ORAL
DR QUESTIONS TO DR+ QUESTIONS WHEN THE TYPE OF
READING MATERIAL BEING DISCUSSED WITH LOW-
AVERAGE READING ACHIEVEMENT STUDENTS
CHANGES FROM EXPOSITION TO NARRATION

| Question Category | Question Frequency | | Total Question Frequency (N) | χ^2 | prob. |
|----------------------|--------------------|---------|---------------------------------------|----------|-----------|
| | Expos. | Narr. | | | |
| DR | A 60 | C 51 | 170 | 3.5 | .10 ns |
| DR+ | B 23 | D 36 | | | |

$$\chi^2 = \frac{N(AD-BC)^2}{(A+B)(C+D)(A+C)(B+D)}$$

was higher in discussion of expository reading material than in discussion of narrative reading material. Although this is not significant enough to warrant rejection of the null hypothesis, it could be indicative of some small measure of more variety in teacher's oral question types in teacher-class discussion of narrative reading material than in teacher-class discussion of expository reading material.

Tables XVII and XVIII give percentages for question categories from discussion with the low-average reading achievement student group in discussion of exposition and narration.

TABLE XVII

THE FREQUENCY AND PERCENTAGE OF TEACHERS' ORAL
QUESTIONS IN EACH QUESTION CATEGORY WITHIN THE
SUBSAMPLE FROM DISCUSSION OF NARRATION WITH
THE LOW-AVERAGE READING ACHIEVEMENT STUDENT
GROUP

| Question Category: | | Frequencies for Individual Categories | Percentages for: | |
|--------------------|----------|---|------------------|-----------------|
| Individual | Combined | | Indiv. Categ. | Comb. Categ. |
| Procedural |]— P-A | 37 | 29.6 | 30.4 |
| Affective | | 1 | 0.8 | |
| Creative |]— DR+ | 1 | 0.8 | 28.8 |
| Thinking | | 18 | 14.4 | |
| Reasoning | | 17 | 13.6 | |
| Judgment | | | | |
| Memory | DR | 51 | 40.8 | 40.8 |
| Total | | 125 | 100.0 | 100.0 |

TABLE XVIII

THE FREQUENCY AND PERCENTAGE OF TEACHERS' ORAL
QUESTIONS IN EACH QUESTION CATEGORY WITHIN THE
SUBSAMPLE FROM DISCUSSION OF EXPOSITION WITH
THE LOW-AVERAGE READING ACHIEVEMENT STUDENT
GROUP

| Question Category: | | Frequencies for Individual Categories | Percentages for: | |
|--------------------|----------|---|------------------|-----------------|
| Individual | Combined | | Indiv. Categ. | Comb. Categ. |
| Procedural |]— P-A | 33 | 26.4 | 33.6 |
| Affective | | 9 | 7.2 | |
| Creative |]— DR+ | 0 | 0.0 | 18.4 |
| Thinking | | 9 | 7.2 | |
| Reasoning | | 14 | 11.2 | |
| Judgment | | | | |
| Memory | DR | 60 | 48.0 | 48.0 |
| Total | | 125 | 100.0 | 100.0 |

Again a combined procedural and affective question category comprised approximately one-third of the total question frequency. The frequency of affective questions was much larger in the context of the expository reading material. The percentage of teachers' DR questions was greater than the percentage of teachers' DR+ questions in teacher-class discussion of both narration and exposition. Percentage differences were greater in discussion of exposition where the comparison of DR to DR+ questions was 48.0 per cent to 18.4 per cent as compared to 40.8 per cent to 27.8 per cent in discussion of narration. The proportion of reasoning questions was twice as great in the context of the narrative reading material than in the context of the expository reading material.

It can be seen in Tables XVII and XVIII that although it was not found to be significant, more variety in teachers' oral question types exists in teacher-class discussion of narration with low-average reading achievement groups than in discussion of exposition. This can be seen from the larger percentage of reasoning questions and the smaller proportion of memory questions in discussion of narrative reading material than in discussion of expository reading material. Since reasoning questions depend closely upon literal meaning of what is read, an approximate equivalence of their proportion to judgment questions seems justifiable in teacher-class discussion

with low-average reading achievement students. Noteworthy was the much larger percentage of affective questions asked by teachers in discussion of expository reading material than in discussion of narrative reading material. A question follows. Is this an attempt at questioning flexibility by teachers in discussion of exposition where they seem to be lacking questioning sophistication?

The higher percentage of teachers' oral judgment questions than that of reasoning questions in discussion of exposition with the low-average reading achievement student groups was a reversal of the trend found in discussion with superior reading achievement student groups. In the discussion with superior reading achievement student groups teachers asked more judgment questions in discussion of narration. Their prevalence over reasoning questions related to experiential questions asked during the discussion of exposition. For example a question such as, "Which would you prefer?" or an awkwardly worded question such as, "How would you compare, having read this selection about surf fishing; how would you compare it with fishing in lakes and rivers?"

Summary

The analysis of data involved a total of 336 teachers' oral questions. This total was the remainder after

abstraction of procedural and affective questions from the sample of 500 teachers' oral questions chosen randomly from the typed transcription. A summary of results is presented in Table XIX.

Procedural and affective questions asked by the teacher made up one-third of all questions asked but were not included in the analysis since they did not deal directly with reading comprehension. This proportion remained almost constant in all contexts.

The analysis of the total sample of teachers' oral questions found that the frequency of DR questions was significantly greater than the frequency of DR+ questions. When the type of reading material being discussed changed, a highly significant difference in the proportion of teachers' DR to DR+ questions was found. The proportion of teachers' DR questions to DR+ was close to 1:1 within discussion of narrative reading material as compared to approximately 3:1 within discussion of expository reading material. This was highly significant for the total question sample as well as in discussion with the superior reading achievement student groups. The difference was present but not at a significant level in discussion with the low-average reading achievement student groups. During discussion of narration with superior reading achievement student groups more DR+ than DR questions were asked by teachers.

TABLE XIX

A SUMMARY OF FINDINGS

| | For the Total Sample | When Type of Reading Material Discussed Changes | When the Student Reading Achieve- ment Level Changes | When the Type of Reading Material Being Discussed Changes: In Discussion with Superior Reading Achievement Students In Discussion with Low- Average Reading Achievement Students | Exp. | Narr. | Sup. | Low-Aver. | Exp. | Narr. | Exp. | Narr. |
|---------------|----------------------------|---|---|--|--------|-------|------|-----------|------|-------|------|-------|
| | | | | | | | | | | | | |
| DR Questions | Frequency | 208 | 121 | 87 | 97 | 111 | 61 | 36 | 60 | 23 | | |
| DR+ Questions | Frequency | 128 | 43 | 85 | 69 | 59 | 20 | 49 | 51 | 36 | | |
| N | Total Frequency | 336 | 336 | 336 | 336 | 336 | 166 | 170 | | | | |
| χ^2 | = | 38.1 | 19.2 | | 1.4 | 20.2 | 3.5 | | | | | |
| Prob. | = | .001** | .001** | .30 | .001** | .10 | ns | | | | | |

** = highly significant

Null hypothesis three assumed no significant difference in the proportion of teachers' DR questions to DR+ questions due to student reading achievement level was upheld. It was found that the proportion did not significantly change between the reading achievement student groups. The frequency of teachers' DR questions was greater than the frequency of teachers' DR+ questions in teacher-class discussion for each reading achievement group.

The analysis indicated that in discussion of narrative reading material for the total question sample and for the question subsample from discussion with the superior reading achievement student group as well, more judgment questions than reasoning questions were asked by the teachers in the study. A consistent pattern is that more affective questions were asked during discussion of the expository reading material. The number of creative thinking questions asked by teachers in the study was negligible.

The findings illustrated a general lack of variety in the type of teachers' oral questions asked in teacher-class discussion during reading lessons observed in the study. This appeared to be due to an overdependence on DR questions by teachers in the study.

The general tendency in the study was for teachers to ask a higher frequency of DR questions than DR+ questions

regardless of the reading achievement level of the students involved.

A trend toward more variety in the types of oral questions used by the teacher was seen when differentiation in the type of reading material being discussed occurred. Teachers used a smaller percentage memory questions and a greater percentage of other question types, except creative thinking, when narrative reading material was being discussed than when expository reading material was being discussed. This was most evident within teacher-class discussion involving superior reading achievement student groups. Here teachers in the study asked more DR+ than DR questions. The change was due to a higher frequency of judgment questions. In teacher-class discussion with low-average reading achievement student groups there was no significant difference in the proportion of DR to DR+ questions when the type of reading material being discussed changed from exposition to narration. There was a trend toward more variety in question types used by teachers in discussion of narration with low-average reading achievement student groups but this was significant only at the .10 level of probability.

IV. CHAPTER SUMMARY

The analysis of data involved transcription of tapes, random selection of the question sample, and a chi-square

test of each null hypothesis for significance. A total sample of 336 teachers' oral questions which did not include procedural and affective questions was used in the analysis.

In an overall view of teacher-class verbal interaction during the reading lessons several prevalent teacher questioning tendencies were noted and several unique teacher questioning tendencies were mentioned. Student verbal behavior relating to the teacher-class discussion during the reading lessons was described.

The testing of the null hypotheses was carried out and interpretations of findings were included. It was found that the frequency of teachers' oral DR questions is significantly greater than the frequency of teachers' oral DR+ questions. Student reading achievement level did not make any significant difference in the proportion between the two categories of teachers' oral questions, DR and DR+. The type of reading material being discussed made a significant difference in the proportion of teachers' oral DR and DR+ questions both in the total sample and in the superior reading achievement student group. That is, there were significantly fewer teachers' oral DR questions as compared to teachers' oral DR+ questions in discussion of narrative reading material than in discussion of expository reading material. This difference was not significant in teacher-class discussion involving low-average

reading achievement student groups. However, in teacher-class discussion of expository reading material the proportion of teachers' oral DR questions to DR+ questions remained high.

The findings indicated that teachers did not ask a variety of question types that could initiate student thinking at levels other than memory except in teacher-class discussion of narration. It was found by analysis of the questions asked that the teachers' oral questions in categories other than memory somewhat restricted the quality of student thinking because the questions revealed an overdependence on the literal meaning of the printed page.

Procedural and affective questions as a combined category were found to equal approximately one-third of all questions asked in the context of testing each null hypothesis.

CHAPTER VI

SUMMARY OF FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The purpose of this study was to investigate both the proportion of teachers' oral question types and the changes made by teachers in the proportions of question types they ask, when the type of reading material being discussed with students changed, and when the student reading achievement level with whom lessons were discussed changed. Observations were made of five grade five reading teachers in teacher-class discussion of narration and exposition with each of two grade five reading achievement student groups, superior and low-average.

Interaction was observed and tape recorded. Tape recordings were transcribed and from the transcription a sample of 500 teachers' oral questions were randomly selected. Questions were classified into six categories adapted from Aschner (1961). They included memory questions, reasoning questions, judgment questions, creative thinking questions, procedural questions and affective questions. Procedural and affective questions were abstracted from the sample and were not included in the analysis of data as it related to reading comprehension. The remaining sample of 336 questions were grouped into memory questions, as those requiring direct-recall responses

(DR) and into reasoning, judgment, and creative thinking questions as those requiring analysis and evaluation in addition to direct recall (DR+). These categories were analyzed to determine if the frequency of teachers' oral questions requiring direct-recall responses was significantly greater than the frequency of those requiring analysis and evaluation in addition to direct recall. Further analyses were made to determine if the ratio of DR questions to DR+ questions changed significantly, when student reading achievement level changed, or when type of reading material being discussed changed. Finally, within group comparisons were made to determine if the type of reading material being discussed with a particular student reading achievement level would cause a significant change in the proportion of DR questions to DR+ questions.

Significance tests were made using chi-square contingency tables to determine acceptance or rejection of null hypotheses.

I. SUMMARY OF FINDINGS

Five null hypotheses were tested for significance within this study. Three were rejected; two were upheld.

Null Hypothesis One: Question Type Frequencies

Null hypothesis one that hypothesized no significant difference between the frequency of teachers' questions

requiring direct-recall responses and those requiring analysis and evaluation in addition to direct recall was rejected at a highly significant level of probability. From the total analyzed sample of 336 teachers' oral questions it was found that teachers ask significantly more DR questions than DR+ questions.

Null Hypothesis Two: Change for Type of Reading Material

A highly significant difference was found in the ratio of teachers' questions requiring direct-recall responses and those requiring analysis and evaluation in addition to direct recall when the type of reading material being discussed with students changed. This was attributable to the fact that the ratio of DR questions to DR+ questions was approximately 3:1 when expository reading material was discussed compared to a ratio of approximately 1:1 when narrative reading material was discussed. These findings determined the rejection of null hypothesis two.

Null Hypothesis Three: Change for Student Reading Achievement Level

There was no significant difference in the proportion of teachers' oral DR to DR+ questions when the student achievement level involved in teacher-class discussion changed from superior to low-average. Null hypothesis three was upheld because regardless of the reading achieve-

ment level of students involved in teacher-class discussion, teachers ask proportionately more DR than DR+ questions.

Null Hypothesis Four: With Superior Reading Achievement Student Groups

In discussion with superior reading achievement student groups there was a highly significant difference in the proportion of teachers' questions requiring direct-recall responses to those requiring analysis and evaluation in addition to direct recall when the type of reading material changed from exposition to narration. The proportion of teachers' DR questions to DR+ questions in discussion of exposition was approximately 3:1 as compared to 0.7:1 in discussion of narrative. These proportions indicated that teachers asked more DR+ questions than DR questions in discussion of narrative reading material with superior reading achievement student groups. This is a complete reversal of the general trend and caused rejection of null hypothesis four which hypothesized no difference in the proportion due to a change in the type of reading material being discussed.

Null Hypothesis Five: With Low-Average Reading Achievement Student Groups

Null hypothesis five which hypothesized no significant difference in the proportion of teachers' DR

to DR+ questions when the type of reading material changed from exposition to narration in teacher-class discussion with the low-average reading achievement student group, was upheld. The proportion of DR to DR+ questions teachers asked in discussion of exposition was higher than in discussion of narration. This difference was not significant as it was in discussion with the superior reading achievement student group.

General trends in teachers' question categories were noted. Procedural and affective questions as a combined category amounted to approximately one-third of the total sample or subsample used to test each null hypothesis. Affective questions were asked more frequently in discussion of expository reading material than in discussion of narration. Incidence of judgment questions was higher in discussion of narrative reading material than in discussion of exposition. This was especially true in discussion with the superior reading achievement student groups. A particularly pertinent fact was the significantly higher proportion of teachers' DR questions to DR+ questions in teacher-class discussion of expository reading material. The number of teachers' creative thinking questions asked was negligible.

Prevalent tendencies in teacher questioning behavior noted from observations by the investigator and from the analysis of tapes and typed transcriptions were mentioned

in the study. Several tendencies seemed to be indicative of the teacher attempting to do the pupils' thinking for them. These included voice inflection and wording during questioning, interruption of an unacceptable response, and series of alternative answers embodied in questions. Teachers' questions appeared at times to be ambiguous; then teachers rephrased their questions. Noticeable also was a tendency for teachers to repeat their own and pupils' questions and to repeat pupils' responses.

Commendable tendencies included asking global questions, a series of questions about one point in the story, and experiential questions that related to the context of what had been read.

Unique teacher traits observed in teacher questioning-behavior included: the individual nature of paralinguistic devices, the apparent restrictive effects of poor discipline in one case and non-restrictive in another, the permissiveness for lengthy pupil responses, and the encouragement of pupil questioning.

Student verbal behavior was limited almost totally to responses to teacher solicitations. One hundred fourteen student questions in all were asked and most of these were asked by the reading classes of one teacher. No student direct to student interaction was noted. The teacher always acted as an intermediary.

II. CONCLUSION

It can be concluded that teachers' questioning behavior lacks variety in the types of questions asked. More teachers DR questions than DR+ questions were asked. This was particularly true in teacher-class discussion of exposition. Therefore, a dependence upon direct recall only as a level of thought called for in students' responses was evident. Although more variety in teachers' oral question types apparent in discussion of narration, the quality of student thinking beyond the level of direct recall was limited by teachers' dependence upon the literal meaning of the printed page. Teacher familiarity with narration through use of the basal reading series may have been a contributing factor in teacher-questioning variety noted here. However, the questioning variety evident in narration was not great enough to merit rejection of the null hypothesis in teacher-class discussion with the low-average reading achievement students.

Teachers did not change their pattern of question types when the student reading achievement level changed. That is, more DR than DR+ teachers' oral questions were asked regardless of the student reading achievement level involved in teacher-class discussion.

Level of student thinking called for by teachers' oral question types is also restricted by the teachers'

wording of the questions, their voice inflection suggesting correctness or incorrectness of responses, and their repetition of questions. Also restrictive was the asking of questions in a series to lead students' thought before calling for a response, and the embodying of alternative responses in the wording of the question by the teacher.

Students' verbal behavior in teacher-class discussion is limited almost wholly to responses to teacher solicitations.

III. IMPLICATIONS

Any study of classroom interaction should have implications for teacher education, both preservice and inservice.

The fact that teachers had more variety in their questioning behavior in discussion of narrative reading material was minimized when the quality of the DR+ questions was observed. Most DR+ questions were worded so the desired response was obvious in the wording of the question, in the teacher's voice inflection, or in the text of the selection read. Example of these are:

"Was this an unusual thing that he had chores to do?"

"Why would the men get cold if they left their clothes on?"

Teachers should be made aware that their questions could be motivators of classroom discussion and that open-ended questions can motivate thought and interest in the students. Teacher awareness of the role of questions could be brought about through specific teacher education in the art of questioning. Such a need was cited by Stevens (1912) and still seems to be a need in teacher education.

Findings indicate that in discussion of expository reading materials teachers asked a preponderance of questions requiring direct-recall responses. Since teachers' questioning behavior changed for the type of reading material, a lack of teacher sophistication with reading material other than narration is suggested. This suggests that there should be broader teacher education in reading extending more often to the content area subjects where written material varies from the primarily narrative type of reading material of the basal readers.

Most researchers of children's thought including Taba (1964), Russell (1956), and Peel (1960) agree that both superior and low-average students in the elementary school are capable of reasoning beyond the direct-recall level. They warn, however, of lifting the level of thought without adequate preparation. Direct-recall questions lay the groundwork for other levels of thought and Taba (1964), Russell (1956) and Peel (1960) state

that more memory thinking is required by low-average achievement students than by superior achievement students before a cognitive leap can be made to reasoning, judgment, and creative thinking levels of thought.

Retention of null hypothesis three that hypothesized no significant difference in the proportion of questions requiring direct-recall responses to those requiring analysis and evaluation in addition to direct recall due to reading achievement level of the students, also has implications. Although a difference was noted, it was not significant. Nevertheless, making teachers more aware of theories of child development and of learning and of research findings in both areas especially as they relate to individual differences and to instruction is warranted.

Each type of reading material presents its own unique demands upon the reader. Some basic skills and abilities cannot be developed through the use of narration. Bond and Tinker (1967) point out that the basal reading program which is primarily narrative is used to develop reading interests and tastes as well as the general reading abilities of comprehension and vocabulary. The content area subjects, such as social studies, science, and arithmetic, involve more use of exposition. Exposition makes the demands of specialized vocabulary and specialized concepts. There is a need for the reader to interpret relationships especially cause and effect relationships.

The organizational pattern of exposition may be unique and therefore, teachers should be aware of the demands presented by exposition. They could then through the use of artful questions make the students aware of these demands so that there is less dependence on the direct-recall level of meaning in teacher-class discussion of exposition as found in this study. This implication is also embodied in the need for preservice and inservice education in child development as it relates to the art of questioning. It could be linked to the theoretical background to the problem of teachers' questioning discussed in chapter two.

The significance of these implications perhaps can be seen in the success of preservice and inservice education related to classroom interaction as conducted by Flanders and his associates (1967) and by Taba (1964). In most cases their courses for teachers involved complete interaction rather than a specific element of the interaction as cited here.

The teachers involved in this study tended to regard themselves as manipulators of student verbal behavior and directors of student thought. They acted as the intermediaries in all classroom discussion and tended to discourage responses that seemed to diverge from the *one* that they had in mind. The teachers were the initiators of almost all classroom discussion. Bond and Tinker (1967) cited a survey by Austin and Morrison. Results of the

survey indicated that teachers felt that they did not have time to teach everything. They felt it was more important to cover the content than to teach the reading skills needed in the content areas. This might be partly due to the need to teach content for examinations but in an age of knowledge explosion such an attitude does not seem defensible. Instead, there should be a basic change in the teachers' philosophy of their role in teaching and learning.

Teachers should perhaps see their role as that of indirect guides to learning through teaching the use of reading skills necessary in content area subjects such as: seeing relationships between facts, seeing organization within a reading selection, and becoming acquainted with specialized vocabulary. This should include the use of more open-ended questions. Then pupils could be motivated to reason out their own solutions. Inter-pupil discussion could also be encouraged. The teacher as an indirect guide and resource person could assist the pupils in their reasoning.

IV. RECOMMENDATIONS FOR RESEARCH

The results of this study provide some interesting possibilities for future research. The following studies are suggested:

- (1) An investigation of the types and proportions

of teachers' oral questions in classroom interaction during the teaching of the various content area subjects such as arithmetic, social studies, science, and literature could be profitable. Such an investigation might include only expository reading material to determine if teachers use a wider variety of question types than they did in teacher-class discussion of expository reading material in the present study.

(2) A study of teachers' oral questioning techniques at various grade levels might compare proportions of questions requiring direct-recall responses to those requiring analysis and evaluation in addition to direct recall. The study might include the use of narrative and expository reading materials to determine if grade level was a significant factor.

(3) An analysis of the level of student thinking required to respond to teachers' DR+ questions asked in discussion of narrative reading material, could provide empirical knowledge of whether or not the level of student thinking required goes beyond the literal meaning of the selection read. Levels of student thought might be adapted from Peel (1960).

(4) A comparison of the levels of student thinking required to respond to teachers' oral questions soliciting direct-recall responses (DR) to those thinking levels required for answering questions requiring analysis and

evaluation in addition to direct recall (DR+), might be profitable. The comparison might be profitable to investigate whether teachers' DR+ questions arouse a level of thinking that requires more depth of thinking involving reasoning and judgment than do teachers' DR questions.

(5) Teachers' procedural and affective questions as a combined question category comprises one-third of the total teachers' oral questions. An investigation of their contribution to teacher-class discussion and their effect on teacher-pupil relations during discussion might prove worthwhile. For example, does the presence of more affective questions lead to more pupil participation and more free pupil expression of opinion; or does more pupil participation cut down on the number of teachers' procedural questions?

(6) At the present time classroom organization during reading lessons is undergoing many changes. Approaches feature individualized reading, an emphasis on language-experience, and team teaching. An investigation to determine the effects that any one of these innovations might have on teacher questioning frequencies and proportions of teacher question types could be an asset in helping to evaluate the innovative method employed in the classroom.

V. CONCLUDING STATEMENT

This research has been concerned with teacher flexibility in questioning behavior as determined by comparing the proportion of questions requiring direct-recall responses to those requiring analysis and evaluation in addition to direct recall. The investigation has been exploratory in nature and has viewed teachers' oral questioning-behavior in discussion of two different reading material contexts and within two diverse student reading achievement levels in grade five.

It would appear this and future studies in the area of classroom interaction could aid teachers to be more objectively aware of the important nature of verbal interaction. If as Flanders (1965) cites that two-thirds of the time in any classroom someone is talking and two-thirds of the time it is the teacher talking, then close investigation of each facet of the teachers' verbal behavior should be a must. New innovations in classroom organization in reading such as team teaching and individualized learning, are becoming popular. But teachers seem to be a conservative group and classrooms as we know them may be far from obsolete. Before educators can perpetrate effective change, they must have a thorough understanding of the merits and demerits of what it is they wish to change.

Many investigators such as Flanders and his associates

(1967) have studied classroom interaction in total. Their studies give a global illustration of *what is* but do not investigate the quality within any one element. This study has been an attempt to look at one element, the questioning behavior of reading teachers, more closely.

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A P P E N D I X A

THE ART CONTEST

George Scott and Tim McDonald stopped in front of the window of Hill's Furniture Store. Several paintings were hanging there, along with a sign which said: "Modern Art Contest. Prizes for the ten best paintings. Famous art critic to judge contest."

"Do you call that art?" asked George, pointing to a picture made up of large red, blue, and yellow patches of paint with a few black lines splashed here and there. "I can't even tell what it's supposed to be."

Tim chewed the inside of his lip as he stared at the painting. "My father says the same thing about modern art. But Mom says that modern art shows how the artist feels about something or how he sees it."

"Well, this guy must have been feeling terrible. Maybe he was mad and just threw the paint at the paper. It's sure a mess. My little sister Susie could paint a better picture than this."

Tim nodded absent-mindedly as the two boys moved on. Suddenly he stopped. "Sa-a-ay. I've got a great idea. Come on. Let's go over to your house and talk to your sister."

The next morning when Mr. Hill opened his furniture store, he found a large, flat package propped against the door. Inside was a painting. Taped to the painting was a card on which a name and title had been printed. It read: "Susan Scott -- Impressions at Sunset."

Mr. Hill looked at the vivid splashes of yellow, red, and orange. "Hmmm, not bad," he murmured as he placed the picture in the window.

By the end of the week the window was filled with paintings. George and Tim were frequent visitors to Hill's Furniture Store. They watched the window with interest.

One day they overheard a lady remark, "Look at the one called 'Impressions at Sunset'. The artist who painted that picture has real talent. What feeling! What beautiful brushwork! You can certainly tell an experienced artist from an amateur."

George and Tim held their breath until they were down the street. Then the laughter burst forth.

Tim gasped, "Susie certainly got a lot of experience into the first years of her life. Imagine being an experienced artist at the age of four."

On Saturday a crowd gathered in Hill's Furniture Store as the prizes for the art contest were awarded. In the crowd were George and Tim, and with them was a little girl with a long ponytail.

The famous art critic was there to award the prizes. The tenth prize winner received his award first. Then the ninth and eighth prizes were awarded, and so on down the line. Excitement grew as the second and third prize winners were announced. The next name would be the name of the grand prize winner.

"Susan Scott." The name came firmly and clearly. "Our grand prize winner is Susan Scott for her wonderful work 'Impressions at Sunset'. Will Miss Scott please step forward."

George led Susie to the man on the platform. He looked at them and then leaned down and said quietly, "Move along, children." Then he said again, "Will Miss Susan Scott please step forward."

George tugged at the man's arm. "This is Susie -- I mean, Susan -- Scott." He pointed to Susie.

"What?" the art critic sputtered. "Well, of all the ...!" His face reddened. He looked down at Susie who was smiling at him.

Shyly Susie reached up and took the man's hand. Slowly a smile spread over the art critic's face.

"Ladies and gentlemen," he announced, "this is Miss Susan Scott, our grand prize winner. You've heard it said that from the mouth of babes come words of wisdom. Today we have seen that from the brush of a babe can come a work of art!"

The people in the audience laughed heartily and applauded as the man pinned a big blue ribbon on Susie's dress and handed her an envelope.

George frowned and scratched his head. He still didn't understand this modern art. But maybe he'd better start saving some of Susie's pictures. They'd be worth a fortune now that Susie was a famous artist!

A BIRTHDAY ON THE PLAINS

Sara Lou had on a faded red dress. Her brown hair was streaked. It was almost impossible to read the stitching that spelled her name in blue across her apron. With eyes of shoe-button black, she stared into a cloudless sky.

Not a sound broke the stillness of the prairie until, from a distance, there came the low rumble of horses and wagons, growing louder as the teams drew near.

Over the ridge came a wagon train. The horses' hooves pounded the dry, dusty ground. The wagon wheels squeaked and rattled as they rolled over ruts and bumps.

Down the trail it headed, right toward Sara Lou. But before it reached her the lead wagon turned aside on the flat ground and the other followed, forming a large circle. Sara Lou was safe. She might have been crushed by the horses or the hard wheels of the wagons.

When the wagons stopped, a twelve-year-old boy jumped from one and started unpacking his bedroll. This was Bill Young, traveling with his family to start a new life in Utah. He felt grown up working with the men of the train instead of going to school. He helped them hitch the horses to the wagons each morning. He cared for the horses, watering and brushing them during the evening. At each campsite, Bill gathered wood for the fire and helped to keep it going at night. He had even gone on a hunting party with three of the men and seen buffalo in a great herd that covered the plains. At other times he scouted for rabbits or fished in the rivers they had to cross.

Bill's little sister Molly was nearly seven years old. The next day was her birthday. But there would be no special party for her. There would be no fancy presents. Bill's family and all the others were too poor to give a party. They were lucky to be alive and traveling to a new home.

That afternoon in the wagon, Molly had asked her brother, "Bill, couldn't we have a party?"

"I guess not, Molly."

"But what about a make-believe party?"

"What do you mean?" asked Bill.

"You know," answered Molly.

"We'll make believe we have good things to eat, and there'll be presents too -- maybe a doll."

"Ah, we can't have a party, so what's the use?" said Bill. And he stopped talking about it to Molly then. But he thought about it some more.

That night when he saw his mother alone, he spoke to her.

"Mother, Molly asked me about a birthday party. Do you think we could have one?"

Sadly, his mother said she didn't see how they could. There were no special presents. Everything they owned they were wearing or had packed in the big wooden box in the back of the wagon.

"I'd like to do something, but I don't see how we can way out here in the wilderness." And with that she went about her work helping to get the supper ready for everyone.

While they were eating, Molly spoke to Bill again. "You know, I'd be happy if I could just have a doll for my birthday."

"A doll?" muttered Bill. "How are you going to get a doll way out here?"

"That's what I'd like most of all," and Molly took another bite of her sourdough bread, chewing it slowly. There was a faraway look in her eyes.

When he finished eating, Bill walked down the trail looking for wood in the light of the setting sun. Hands in his pockets, his eyes downcast, he moved along the trail. Ahead he thought he saw a piece of wood, but suddenly he stopped! It wasn't wood that he saw, it was an old stuffed doll. It was worn and faded. It had been out in the sun too long. But as he picked it up he could make out the name across the apron -- Sara Lou.

The lantern in Bill's wagon burned late that night as his mother cut and sewed some dress material she had in their wooden box. She even made a new apron, and across the front she stitched the words Sara Lou.

The next day was Molly's happiest birthday. Just when she thought there would be nothing for her, she found a doll by her bed. It was a happy day for Bill and his mother, too.

But it was happiest of all for Sara Lou. No longer did she have to lie in the trail, under the sun and the stars, with no one to love her. She belonged to Molly now, and that was wonderful.

OUTWITTING THE ARCTIC

(A) A group of men sit in a building made in a tunnel of ice. Above them the arctic wind whistles and the mass of ice inches slowly toward the sea. The men, dressed in light summer uniforms, sip fresh orange juice and talk about recent news from the United States.

(B) It's hard to believe, isn't it? Yet men are living in just this way at United States Air Force stations in the arctic. Here man can live only by outwitting nature.

(C) Because man cannot be expected to change to suit the polar environment, he takes his own environment with him to the arctic. In weathertight buildings, sometimes under the ice, men live comfortable lives. Airplanes supply them with the things they need or want. But the cruel forces outside the buildings can never be forgotten.

(D) One day a cook served a breakfast of bacon, eggs, and fresh orange juice, just as he might have done at home. Several hours later he was found frozen stiff. Planning to walk only a short way outside, he had not bothered to put on his weather suit. Without this he was a victim of the arctic chill. He had forgotten to respect the forces which surrounded that pleasant, home-like environment.

(E) Temperatures alone, as low as they may be, are not the chief danger to man's safety. The arctic winds can be cruel, rising to 100 miles an hour within a few minutes. The temperature plus the wind speed gives what is called the "chill factor."

(F) A temperature of 15 degrees below zero and a wind speed of 15 miles per hour together give a chill factor of 42 degrees below zero. A man going out in that weather would feel as cold as he would if it were 42 degrees below zero with no wind.

(G) Every man stationed in the arctic knows the 30-30-30 rule. If the temperature is 30 degrees below zero and the wind is blowing 30 miles an hour, flesh freezes solid in 30 seconds.

(H) Each man who arrives at an Air Force base is put through a test to help him learn to fight the weather. As part of a group of men, he spends a night out in the

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arctic cold. He learns the first steps of surviving, should his plane ever be forced down.

(I) Working slowly but steadily, he and the other men cut blocks of snow. He is careful not to work too fast. He must not become over-heated, because it is dangerous to perspire. Perspiration freezes faster than flesh.

(J) After the men form a roof of snow blocks, they prepare themselves for the hardest step of all -- getting into their sleeping bags. The special sleeping bags are not useful unless in touch with body heat. In below-zero temperatures, the men must take off all their outside clothing and shoes and climb into their sleeping bags. Moving as quickly as possible, they accomplish this task, taking their clothing and shoes into the sleeping bags with them.

(K) Everyone who has taken the test agrees that this is an unforgettable night. But after this experience, a man knows he can now outwit the arctic.

CRAB AND SURF FISHING

(A) Two exciting sports that many fishermen enjoy are surf fishing and crab fishing. These sports are different from all other kinds of ocean fishing. From Mexico to Canada, thousands of tender fish and juicy crabs just wait to be caught.

(B) Like other sports, surf fishing needs practice and preparation for success. If you are inexperienced and want to surf fish, get to know with the local bait man. He knows laws on limits and licenses. He can help with the choosing of bait and equipment.

(C) A rod and reel are the bare necessities for surf fishing. Surf leaders and a sand spike to hold the rod are helpful. Learning to walk in the surf and handle the gear at the same time will keep you busy at first. A bathing suit makes a good uniform. Often a wet fall is part of this sport, so different from the kind of fishing that allows the fisherman to nap in the shade as he awaits a tug on his line.

(D) Do you think of silence and still water as ideal for fishing? Really, rushing water and a booming high-running surf are right for surf fishing. Big fish only come in close enough to be caught by surf casters when there are little fish upon which to feed. An incoming tide will stir the sand and mud, drawing the little fish known as baitfish.

(E) The surf fisher is an active angler of strength and skill, not like the crabber who may sit in his boat and wait for his trap to be filled. To cast from the shore the fisherman must hold the rod with both hands and give it a long swing with a snap of the wrist. It is difficult to send the line close to the feeding fish, many yards off shore. Hours and hours of practice are needed to gain this skill.

(F) There are two main kinds of crabbing -- shore and boat. Shore crabbing, compared to boat crabbing, is an active sport. Although the equipment for surf fishing is simple, far more simple is that needed for shore crabbing. The shore crabber can wait for low tide and then, armed with a garden rake, can dig up a small variety of crab. Both shore crabbing and surf casting are for those who enjoy the feel of sand as it sifts between their toes.

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(G) Offshore crabbing, or boat crabbing, is a sport of chance for the sparetime fisherman, but it is business for the commercial fisherman. He must earn his living from the sale of his catch.

(H) Equipment for offshore crabbing is far more expensive than for surf fishing. A boat and a crab trap are necessary for crabbing. There are ring net, box crab traps, and star crab traps for sale at sports stores. In some places the boat and trap can be rented.

(I) The traps are baited with liver, bacon skin, or fish and lowered to the ocean floor. Now the success of the trip is in the hands of Lady Luck. A crab or two may go into the trap to get the bait. After about fifteen minutes the trap is lifted and checked.

(J) If you like the feel of water as it swirls around your feet, go surf fishing or shore crabbing. If you'd rather sit in a boat beneath the late afternoon sun, boat crabbing is your sport. Either way, have fun.

A P P E N D I X B

STUDENT PLACEMENT IN READING GROUPS

Name: _____ School: _____

(Teacher please circle appropriate response.)

Number of years teacher training: 1 2 3 4 more than 4.

Certificate or degree held: Jr. E. St. E. St. S.
Prof. Cert. B. Ed. OtherNumber of years experience: 1 2 3 4 5 6 7 8 9 10
more than 10Number of years experience in grade five: 1 2 3 4 5 6
7 8 9 10 more than 10

Number of reading courses taken: 1 2 3 more than 3

Most recent reading course taken _____ (fill in the year).

Have you attended recent inservice seminars, institutes,
or convention sessions in reading? Yes NoRegarding Pupils:

Number in the superior reading group _____

Number in the low average group _____

Age range in the superior reading group _____ yrs. to _____ yrs.

Age range in the low average reading group _____ yrs. to _____ yrs.

I.Q. range in the superior reading group _____ to _____.

I.Q. range in the low average reading group _____ to _____.

Basis of placement in the present reading group: (check one
or more)Past achievement _____ Individual teacher diagnosis
of student _____Standardized reading tests _____ Academic performance in
grade five _____

Other _____

Teacher comments: (anything regarding the reading groups
that the teacher feels should be cited as pertinent).

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